IDG.net

## RISING SANs

Storage-area networks could break out if standards evolve. Page 22

## TINY CHIP, BIG BUZZ

Transmeta's Crusoe has corporate users hoping for mobile computers that can run PC software. Page 12

## TALES FROM BOOT CAMP

Training camps now target hard-core techies like Casteel who have prerequisites that almost guarantee their success. Page 44


# COMPUTERWORLD

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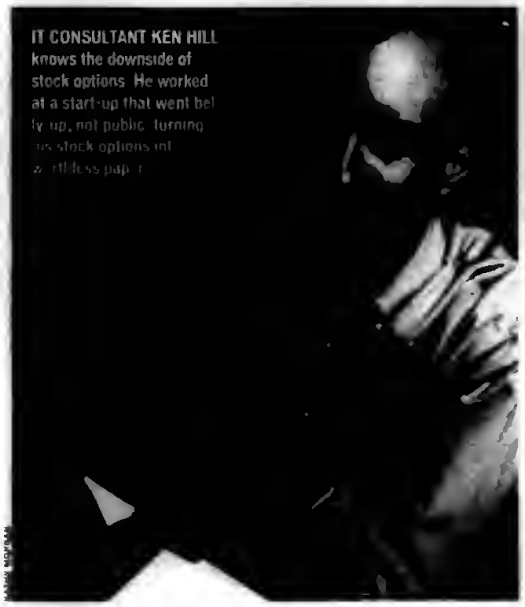


# STOCK OPTIONS: THE UGLY TRUTH

SURE, SOME FOLKS GET RICH jumping into Internet start-ups. But IT professionals lusting after stock options should be forewarned: They aren't all they're cracked up to be. It can take three to five years to be vested, and in the meantime you work long hours at modest pay. Then you have to wait for the IPO and the lockout period before you can cash in. "The whole point of options is to put handcuffs on people," says one recruiter. *Story begins on page 42.*

NEWSPAPER

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# E-RECEIPTS NEXT ON RETAIL FRONT

*XML-based receipts, viewed via browser, could give merchants new shopper data*

BY CAROL SLIWA
NEW YORK

Get ready for the next frontier in retail customer research, one that is also being billed as a way to drive new consumers to e-commerce Web sites.

Within a year to 18 months, both online and in-store shoppers may be able to opt for digital receipts. Based on the XML content-tagging language, the receipts can be viewed through browsers under a standard announced last week and backed by Visa International Inc., Office Depot Inc. and several high-tech vendors led by NCR Corp.

Supporters said widespread adoption of the standard would mean consumers no longer need worry about losing receipts, since they would have a record for warranty that was always available. The digital receipts could also benefit businesses that want to better manage and track employee purchases made with corporate procurement cards.

"Conceptually, I think it's a great idea. If you can eliminate paper, that's good for society and [improves] efficiency and accuracy," said George Chernenko, director of data centers at Toys R Us Inc. in Montvale, N.J. "But practically, there's a lot to be worked out."

*E-Receipts, page 16*

# MICROSOFT VOWS WIN 2K IS SECURE

*But critics say complex code means bugs, holes*

BY ANN HARRISON
SAN JOSE

Microsoft Corp. said last week at RSA Security Inc.'s RSA 2000 security conference that it pulled out all the stops to create a secure Windows 2000, including changing its engineering process and having 15 consultants and 100 big users put the operating system to the test. But security experts charged that the sheer size and complexity of the operating system means it will contain a large number of software bugs that could open up security holes.

Microsoft also announced

*Win 2000, page 79*

# A VITAL YEAR FOR MICROSOFT

*Sales model, leadership in flux as new OS debuts*

BY KIM S. NASH

Microsoft Corp. last week reported record quarterly profits of $2.44 billion and revenue of $6.11 billion, but sales of its Windows operating system didn't grow as much as the company and Wall Street predicted. And they won't be stellar next quarter either, Chief Financial Officer John Connors said.

Indeed, this is a critical year for Microsoft. On the eve of the release of its next operating system, Windows 2000, it also must grapple with the rise of the application hosting market, a change in leadership and legal issues that could literally

*Microsoft, page 79*

# LONG DOMAIN NAMES: ANARCHY.COM?

*Brand skirmishes on tap with extended URLs*

BY PATRICK THIBODEAU

There's a new rush for domains, as more registrars offer the ability to register names up to 63 characters in length. And Saul Klein is in the thick of it.

Klein's registrations include NationalBasketballAssociation.com, InternationalBusinessMachines.com, MicrosoftInternetExplorer.com and Microsoft Corp.'s slogan wheredoyouwanttogotoday.com.

Klein has already received a "hostile" letter from IBM about the registrations and said he believes it's only a matter of time before Microsoft and the

*Domain Names, page 16*

## Domain Growth

***The ability to register domains of up to 63 characters has produced some interesting names:***

- thebiggestpetstoreontheweb.com
- largestshoppingmallintheworld.com
- bestrestaurantsoftheworld.com
- vacationpropertiesforsale.com
- lincolncenterfortheperformingarts.org

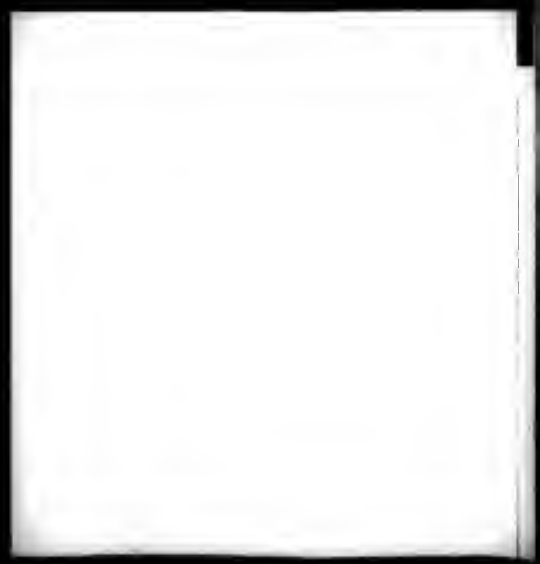
SOURCE: PAUL LUM, INTERNET DOMAIN REGISTRARS

The old

of business no longer apply

And neither do the old





### Windows 2000 Professional

**The reliable desktop and laptop operating system for businesses of all sizes.**
With Windows 2000 Professional, PCs stay up and running so you can focus on getting your work done. You also get a great laptop solution including plug'n'play, power management, and broad device support.

Microsoft Windows 2000 Professional

### Windows 2000 Server

**The multipurpose network operating system for businesses of all sizes.**
Offers a new level of reliability for departmental file, print and Web servers with Active Directory™ service built in.

Microsoft Windows 2000 Server

### Windows 2000 Advanced Server

**The operating system for e-commerce and line-of-business applications.**
Windows 2000 Advanced Server provides clustering and Network Load Balancing and the richest platform for building and deploying Web applications, with COM+, XML, and Internet Information Services 5.0 built in.

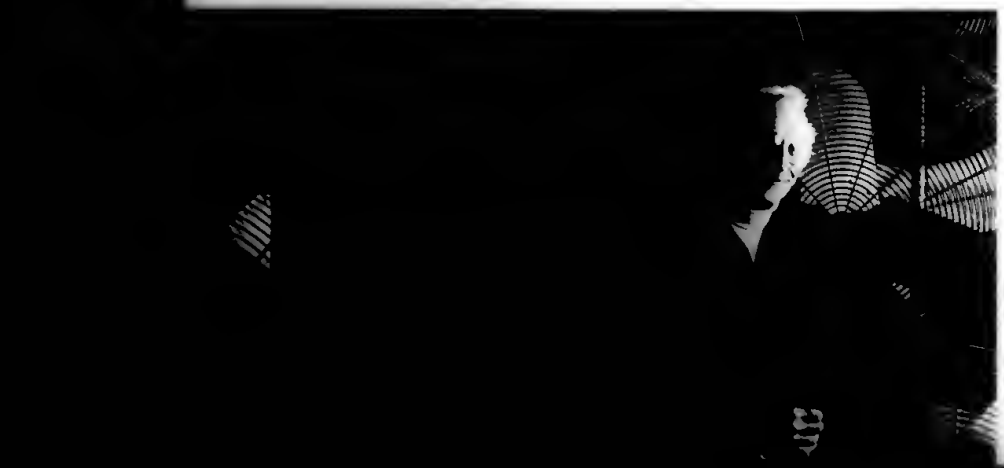
Microsoft Windows 2000 Advanced Server

### Windows 2000 Datacenter Server

**The operating system for business solutions that demand the highest degree of scalability.**
Supports mission-critical solutions like data warehousing, online transaction processing, and ERP with up to 32-way SMP and up to 64 GB RAM.

Microsoft Windows 2000 Datacenter Server

**The Business Internet**
*starts here*
www.windows2000start.com



*Windows 2000 Professional is easy to use, which minimizes training and maximizes productivity for small businesses.*

*Supermarkets Online runs their ValuPage e-commerce site on Windows 2000 Advanced Server. The reliable infrastructure enables them to service 800,000 users per week.*

**Microsoft**

***Where do you want to go today?***

Microsoft Windows 2000 is a new family of desktop and server operating systems built for the new demands of business in the digital economy. Built on NT technology, Windows 2000 has Internet services built right in, making it the best operating system for doing business online. Windows 2000 offers a new standard in reliability and lowers costs because it simplifies system management. Windows 2000 is the operating system for the way business is done today. The Business Internet starts here—**www.windows2000start.com**

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## THE WEB MEETS THE CALL CENTER

**Companies are beginning to integrate their e-commerce functions with their call centers, and that's a big job for people like Jeffrey Ward and Tammy Bare, who are looking at how it will affect workflow processes at SafeCo Property and Casualty in Seattle. Page 48**

## NOT SO ROSIE A PICTURE

**In Ms. MIS, Kathleen Melymuka says women have come a long way since Rosie the Riveter played a big part in the '40s war effort, but there's still a lot of work to be done to remove the glass ceiling that women in IT face. Page 50**

# COMPUTERWORLD THIS WEEK

JANUARY 24, 2000

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2 **GLAXO SMITHKLINE** would need to make integrating IT systems a priority.

4 **OIL COMPANIES RUSH** to build online marketplaces for supplies.

6 **SATURN MOVES** customer service to the Web in a project scbeduled to take two years.

8 **CONGRESS RETURNS** to work prepared to consider a host of IT issues.

10 **USERS ARE HIT** by order entry problems using ERP applications.

12 **TRANSMETA UNWRAPS** its Crusoe chip, revealing a processor with low power consumption.

14 **LOTUS LAYS OUT** its Raven knowledge management initiative, but users are busy migrating to Notes/Domino R5.

18 **J. C. PENNEY** plans to launch an online auction service this spring.

22 **STORAGE-AREA** networks face a few burdles befnre they gain acceptance.

24 **AL ZOLLAR,** Lotus' new CEO, shares his vision with *Computerworld*.


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## BUSINESS 35


36 **ILLINOIS POWER** boosts customer service with wireless networks.

38 **INTERNET APP** targets film distribution market.

39 **FINANCIAL MERGERS** create complications on the IT back end but new opportunities on the Internet.

36 **NETWORK MANAGERS** need business skills to make it in the e-commerce world.

42 **EMPLOYEES FAIL** to receive any payback on stock nptions in many cases.

46 **RECRUITERS DISLIKE** HTML résumés because they create more work fnr them.

48 **E-COMMERCE** forces companies to integrate their call centers with their Web operatinns.

QUICKSTUDY

52 **BALANCED SCORECARD** helps companies determine the impact nf strategic decisions.


## TECHNOLOGY 57


59 **IBM SIGNS** an agreement tn develnp a wireless portal for Vodafone AirTouch.

58 **NEW SITE ALLOWS** service providers to bid on helping you.

59 **HP INTRODUCES** a tool designed to be a nne-stop system for securing Windows NT Web servers.

59 **RSA TEAMS** with VeriSign to provide validation services in the wireless world.

61 **DIGITAL VIDEO** recorders need work, but a backup device for notebooks is a sure thing.

QUICKSTUDY

62 **WIRELESS** Markup Language delivers Internet content to small wireless devices.

64 **START-UP IPASS** promises to manage the Internet access that your world-traveling employees need.

66 **IT PROS FACE** a mixed future as far as mainframe skills go.



WE RELIED ON ORACLE'S SALES TEAM TO TELL US WHETHER THEIR SOFTWARE COULD DO THIS OR NOT. WE JUST FEEL LIKE WE'VE BEEN BURNED.

ANDREW HADDEN, GENERAL COUNSEL OF THE ASSEMBLIES OF GOD IN SPRINGFIELD, MO., ON ITS DECISION TO DELAY A ROLLOUT OF ORACLE'S ORDER ENTRY SOFTWARE AND OTHER APPLICATIONS.

SEE PAGE 10.


## OPINIONS


28 **IT MANAGERS** should take note of last week's launch nf the Crusoe chip, writes Maryfran Johnson. It could be part nf the dramatic technological changes speeding toward corporate America.

28 **IT NEEDS TO THINK** about privacy protections at the very beginning of projects, not later on, Dan Gillmor writes.

29 **THE AOL/TIME WARNER** deal is based on business, not broadband, David Moschella contends. And it may result in a case where 1 + 1 equals 1 1/2, he says.

30 **DON'T MAKE** irrational decisions when you're hunting for an e-commerce consultant, says IT services watcher Susan Scrupski-Miranda.

30 **WILLIAM ULRICH** says it's too early to close the book on the year 2000 problem.

40 **ED YOURDON** proposes applying the same discipline that was applied to the Y2K effort to all future projects.

54 **THE WORD *CAN'T*** doesn't always mean *no*. Sometimes you can turn a vendor's *can't* into a yes, says Joe Auer.

# Market Pressures Will Make IT a Priority in Drug Merger

*Planned giant will need to integrate ERP systems*

BY CRAIG STEDMAN

INFORMATION technology may not be the first thing on the minds of executives at Glaxo Wellcome PLC and SmithKline Beecham PLC as they move forward with a $76 billion merger deal that was announced last week.

But analysts said competitive pressures should make it a priority for the two U.K.-based pharmaceutical heavyweights to combine their systems — which are based on different enterprise resource planning (ERP) applications — into a unified setup.

The pharmaceutical business "is an incredibly competitive market, and everybody is facing the same huge urgency to improve speed to market and globalize operations," said Steve Shaha, an analyst at Gartner Group Inc. in Stamford, Conn. "You can't do that with fragmented systems."

Shaha said the combined company, which will be known as Glaxo SmithKline if the deal goes through, needs to decide on a new IT strategy and be well on its way to executing it within two to three years.

But the presence of multiple ERP systems complicates matters. "Technically, this will not be a slam dunk," Shaha said. But, he added, neither Glaxo Wellcome nor SmithKline Beecham "is advanced enough to be able to rely on its current systems to manage the combined company."

Glaxo Wellcome uses SAP AG's R/3 software throughout most of its operations.

On the other hand, SmithKline Beecham has installed financial and order processing applications developed by Denver-based J. D. Edwards & Co. and manufacturing software from System Software Associates Inc. in Chicago.

The high cost of proving that different manufacturing systems comply with government food and drug safety regulations is another big reason for the two companies to develop a common IT plan, said Roddy Martin, an analyst at AMR Research Inc. in Boston.

Compliance costs can chew up as much as 40% of a pharmaceutical company's IT budget if its systems are fragmented and need to be validated separately across key functions, according to research conducted by AMR. "That's a scary number," Martin said.

Spokesmen at Glaxo Wellcome and SmithKline Beecham said it's too early for the companies to talk publicly about nuts-and-bolts issues, such as their IT plans. Until last week, the merger was being discussed only at the highest executive levels, they said.

But Glaxo SmithKline would hope to better exploit at least one form of technology after the merger's scheduled completion next summer: the Internet. Officials from the two companies said they plan to be more aggressive about marketing via the Web.

That could be one way to stand out in what remains to be a crowded market, despite a recent rash of proposed mergers and acquisitions.

"It's such a disjointed market," said Andrew Becker, executive vice president of The Mendel Group Inc., a management consulting firm in Redwood City, Calif. "I don't know of any other large business that's this fragmented."

Other pharmaceutical deals in the works include a proposed merger of Monsanto Corp., a St. Louis-based SAP user, and Pharmacia & Upjohn Inc. in Peapack, N.J.

Warner-Lambert Co. in Morris Plains, N.J., is another SAP user that's involved in an acquisition saga. Last fall, it agreed to merge with American Home Products Corp. in Madison, N.J. But now it's discussing a deal with New York-based Pfizer Inc. ▶

AT A GLANCE

## Teaming Up

*Details of the planned merger between Glaxo Wellcome and SmithKline Beecham:*

Combined size: $24.9B

Estimated pharmaceutical market share: 7.3%

Total number of employees: 107,000

Value of the deal: $75.7B in stock

Key software used internally: SAP R/3 at Glaxo Wellcome; J. D. Edwards and System Software Associates applications at SmithKline Beecham

**MOREONLINE**

For resources related to the pharmaceutical industry and IT, visit our Web site
www.computerworld.com/more

# United Airline's E-Commerce Unit Takes Off

*Web site, service deals key to online strategy*

BY STACY COLLETT

UAL Corp.'s United Air Lines Inc. is rolling out a wide variety of online travel services at Internet speed, thanks to its decision to split off a separate e-commerce unit.

Just last week, it unveiled a revamped Web site and a new flight-status paging service.

The moves follow a steady stream of e-commerce activity by the Chicago-based airline as it looks to capitalize on the $4.2 billion online travel market, which is projected to grow to $16.6 billion by 2003, according to Jupiter Communications Inc. in New York.

Earlier this month, United announced plans to launch a 70-person e-commerce subsidiary dedicated to online and wireless strategies.

Scott Praven, head of the new division, said the unit has an advantage because it can focus exclusively on growing online revenue.

In addition to its Web site, United has launched CollegeTravelNetwork.com, an online service created to address the travel requirements of college students. It's also developing an online travel store with Aliso Viejo, Calif.-based retailer Buy.com Inc. It is scheduled to debut this month.

Last month, United announced a partnership with Delta Air Lines Inc., Northwest Airlines Inc. and Continental Airlines Inc. that will create the first multiairline travel portal to offer Net-only fares.

"[United is] strategizing so they're in every area of travel in e-commerce," said Krista Pappas, an analyst at Gomez Advisors Inc. in Lincoln, Mass.

Only 4% of United Airlines' tickets are currently issued online through UAL.com and other online booking services, officials said. That figure is expected to reach 20% by 2003.

To reach those goals, United and other airlines are separating their e-commerce units as "dot corps" to compete online. Delta launched its 40-person eDelta group last February.

"You have to have a group of decision-makers in one room to keep things moving continually," said Kevin Dunn, Delta's e-commerce manager.

American Airlines in Fort Worth, Texas, has an interactive marketing group, but it isn't a separate business unit.

These airlines "recognize that e-commerce operates at a different speed and a different culture ... with its own distinct technology needs and challenges," said Henry Harteveldt, an analyst at Forrester Research Inc. in Cambridge, Mass.

United's new Web site lets customers research fares and schedules, check flight information and access Mileage Plus account information directly from the home page. The number of mouse clicks required to accomplish most tasks has been reduced from eight to six, said Rick Collins, director of Internet marketing.

United also introduced a free paging service that informs customers of flight delays, cancellations and gate information via e-mail. ▶

## United Air Lines Web Projects Take Off

**NOV. 1** Launches CollegeTravelNetwork.com, designed to meet the travel needs of college students

**NOV. 10** Partners with Delta, Northwest and Continental to develop multiairline travel portal

**JAN. 13** Unveils plans to launch an e-commerce subsidiary dedicated to online and wireless strategies

**JAN. 18** Launches revamped Web site with faster access to features and flight-status paging capabilities

**JANUARY** Scheduled launch of BuyTravel.com, an online travel store developed with Internet retailer Buy.com Inc.

SOURCE: UNITED AIR LINES INC.

**MOREONLINE**

For resources on the airline industry and IT, visit our Web site.
www.computerworld.com/more

## Corrections

Due to an editing error, a headline on page 14 of the Jan. 17 issue incorrectly described the content of the article, which was about Business Objects' WebIntelligence software.

Due to a reporting error, a Jan. 3 story incorrectly identified the company that bought tools divested by Islandia, N.Y.-based Computer Associates International Inc. in its acquisition of Vienna-based Legent Corp. The company that bought the tools is Minneapolis-based B. I. Moyle Associates Inc.

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In seconds

Sorry fella

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## AT DEADLINE

### Ransom Denied

Visa International Inc. said last week that intruders had penetrated its computer network in the U.K. and demanded a $16.3 million ransom for stolen information. A spokeswoman for Visa International said that the invaders didn't access consumer data or transaction processing systems and that the company refused to pay the ransom.

### IBM Cites Y2K Issues

IBM said year 2000-related system lockdowns prompted a mediocre fourth quarter. Revenue fell by 4% to $24.2 billion, compared to the same period last year, while profits dropped 11% to $2.1 billion. Analysts dismissed the slowdown as a temporary blip caused by Y2K concerns.

### Webcaster Under Fire

Ten motion picture companies, three television broadcast networks, the National Football League and the National Basketball Association are suing a Toronto Internet broadcaster for copyright infringement. The suits stem from TVRadio Now Corp.'s practice of streaming feeds from 17 broadcast stations in Canada and the U.S. on the Internet through its site *www.icravetv.com*. While Canadian law allows such rebroadcasting, U.S. copyright laws explicitly prohibit unauthorized reuse of broadcast content.

### More Baan Changes

Baan Co. announced more management changes in the wake of CEO Mary Coleman's resignation earlier this month. The Netherlands-based software vendor named Mike Shinya executive vice president of worldwide sales and gave Paul Daly, who has been managing North American sales, added responsibility for South and Central America.

### Short Takes

BORDERS GROUP INC. tapped Tamara Heim to be president of its Web site and brick-and-mortar bookstores, replacing Rich Flanagan, who's retiring. . . . TSI INTERNATIONAL SOFTWARE LTD. in Wilton, Conn., changed its name to Mercator Software Inc.

# Oil Firms Rush to Set Up Supply Nets

*Chevron, Statoil, Shell build online marketplaces*

BY CAROL SLIWA

WHAT do Chevron Corp., Shell and Norway's state-owned Statoil have in common?

They're all petroleum companies that announced deals with technology vendors in the past two weeks to develop online marketplaces where any company can buy supplies that these gas and oil companies use to run their businesses, from pencils and paper to engineering and construction services.

"This is another landgrab, a space race, where everyone wants to be first in this market," said Bruce Richardson, an analyst at AMR Research Inc. in Boston. He likened the news to similar announcements from General Motors Corp. and Ford Motor Co. on Nov. 2. "We're in the very early phases of hype. But I think the difference between this and the hula hoop is that the [online] exchanges will have staying power."

The theory is that leveraged buying will produce better prices for everyone and that companies will be able to find supplies, compare prices, track purchases and streamline ordering more easily.

But one of the problems with online trading exchanges that are built around any one big company is built-in bias. "Anybody that thinks these are independent exchanges is deluding themselves. Competitors won't do transactions over them," said AMR analyst Pierre Mitchell. Consequently, many of the online exchanges now being built and billed as industrywide networks "will collapse, basically, to private extranets," Mitchell said.

> Everyone wants to be first in this market.
>
> BRUCE RICHARDSON, ANALYST, AMR RESEARCH INC.

What differentiates the Petrocosm Marketplace, announced last week by San Francisco-based Chevron and Mountain View, Calif.-based Ariba Inc., is its unique equity structure, under which participants, including Chevron's competitors, can be granted equity in the exchange based on how much business they do over the network. Chevron, Ariba and Crosspoint Venture Partners in Woodside, Calif., are minority stakeholders in Petrocosm, which is scheduled to go live in the second quarter.

Statoil's global marketplace, announced the day before Petrocosm, is also pegged for a second-quarter launch. SAP AG is providing the software infrastructure.

Meanwhile, Shell is working with Commerce One Inc. in Walnut Creek, Calif., on yet another marketplace for the energy industry. Initially, Shell will have a majority stake in the joint venture. Commerce One and the joint venture staff will also have an equity stake.

Plans call for Commerce One to grant Shell 4.28 million shares of its stock in exchange for the right to receive shares in the new company prior to its initial public offering.

"Executives at big companies are determined to get involved in these exchanges — to create them or invest in them," said analyst Vernon Keenan at Keenan Vision Inc. in San Francisco. "But I think there will be general skepticism, especially among other buyers, that they're not going to be fair."

*Julin King contributed to this report.*

# Big Five Firms Eye E-Commerce Market

*Two of them launch assessment services*

BY JULEKHA DASH

Targeting the burgeoning demand for e-commerce services, two Big Five consulting firms have boosted their offerings with services aimed at evaluating a company's online business operations. Analysts said the moves are timely, as many companies have more capital to spend on e-commerce projects post-Y2K.

Last week, New York-based KPMG LLP launched a service called Saved, where consultants assess a client's back-end processes, including order management, fulfillment and help desk functions.

The move follows an announcement from rival PricewaterhouseCoopers, which two weeks ago announced a similar electronic-diagnostic service called Emm@. It provides a framework for analyzing a company's readiness for electronic business in areas such as strategy, organization and technology, by comparing a client's model to a set of collected best business practices. New York-based PricewaterhouseCoopers has already used Emm@ with clients in Europe but only recently launched the service in the U.S.

The opportunities in e-commerce services are big. Kennedy Information Research Group in Fitzwilliam, N.H., expects the worldwide Internet consulting market to grow almost sevenfold over the next few years, from a little more than $4 billion in 1999 to more than $27 billion in 2003.

"Many companies, because of Y2K, haven't fully integrated front-end Web applications with back-end delivery systems" such as procurement, inventory and shipping, said Julie Giera, an analyst at Giga Information Group Inc. in Cambridge, Mass.

Giera added that the new services come just after shipping snafus at high-profile retailers, such as Toys R Us Inc., during the holiday season; those problems have prompted companies to take a harder look at their e-commerce initiatives [News, Jan. 3].

Though neither company would disclose client names, KPMG Managing Director Bob Hutchinson said the firm is "close to signing" a few deals for the service, while Cathy Neuman, electronic-business leader at PricewaterhouseCoopers, said the firm has signed up about a half-dozen U.S. clients.

Tools and services geared specifically toward revamping a client's e-commerce operations could be a way for the Big Five to distinguish themselves from their smaller competitors, said Bill Martorelli, a vice president at Hurwitz Group Inc. in Framingham, Mass.

"If you lead with these assessment offerings, it is almost a certainty that you will win additional business to fix whatever was discovered in the assessment," Giera said.

JUST THE FACTS

## E-Valuation Services

**KPMG's Saved:**

- Evaluates clients' back-end processes within three weeks
- Intended for business-to-consumer space
- Launched TPI, trading partners integration, for the business to business space

**PricewaterhouseCoopers' Emm@:**

- Computer model and framework that establishes 700 best-practice standards for e-commerce
- Partnered with Carnegie Mellon University to launch the Center for E-Business Innovation, a test lab for Emm@
- Intended for both business-to-consumer and business-to-business transactions

# Need to Process and Protect Large Amounts of Data?

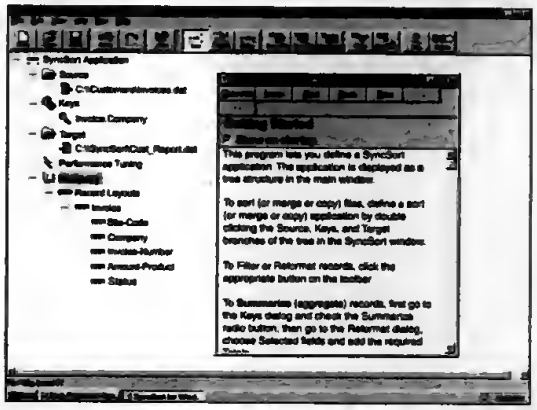
*Syncsort: High-Performance Software for Data Warehouses*

### Syncsort Products Are Fast, Flexible, and Easy-to-Use

Syncsort software can help you build your data warehouse faster — and keep it secure. While you're building your warehouse, use SyncSort for state-of-the-art sort and data manipulation on UNIX, Windows NT®, and the mainframe. And once your warehouse is in production, protect it with Backup Express, Syncsort's fast and flexible enterprise backup/restore solution.

### SyncSort: Cut Load Time by 90%

For more than 30 years, SyncSort has been the world's leading high-performance sort and data manipulation product. It can select and group records, insert, remove and reorder fields, and summarize/aggregate and sort records at lightning speed.

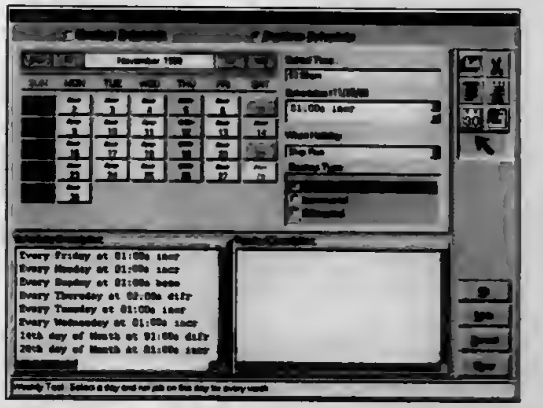


***A familiar Windows-like graphical user interface gives you drag-and-drop access to all of SyncSort's powerful features on NT.***

Staging your data with SyncSort lets you use the fastest database load techniques, reducing overall staging and load time by up to 90%. SyncSort also accelerates extract processing to speed warehouse-related statistical and reporting applications.

### Backup Express: Powerful Backup with Centralized Control

Another of Syncsort's state-of-the-art products is Backup Express, a powerful enterprise backup/restore solution. Designed for distributed processing, Backup Express allows you to attach storage devices to any computer on your network,



***Through the simple, intuitive Backup Express interface, you can schedule backups, run restores, add devices, or check job status.***

whether it is running UNIX, Windows NT, or NetWare. Yet centralized administrative control is always maintained through an intuitive drag-and-drop graphical user interface. Support for efficient online and offline database backup is also included.

### One of the "Data Warehouse 100"

Data warehouse specialists recently voted Syncsort one of the top vendors in the prestigious "Data Warehouse 100." This honor reflects not only the importance of Syncsort products in warehouse development and management, but also the high quality of Syncsort's responsive, reliable customer support.

**SyncSort and Backup Express are high-performance solutions to your data warehouse problems. You can arrange FREE trials of full-production versions of these products by visiting the Syncsort Web site at:**

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**You can also request a free copy of "6 Data Warehouse Tasks Made Easier with SyncSort."**

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# Saturn to Move Customer Service to Web in $300M Deal

*Two-year project involves three vendors*

BY JULEKHA DASH

IN A MOVE one analyst described as a "massive undertaking," General Motors Corp.'s Saturn Corp. last week awarded three companies a seven-year contract for almost $300 million to develop a Web-based customer service and inventory management system.

Computer Sciences Corp. (CSC) in El Segundo, Calif.; San Mateo, Calif.-based Siebel Systems Inc.; and Dayton, Ohio-based The Reynolds and Reynolds Co. will spend the next 15 months developing the system, which will take one year to deploy. The vendors will then provide an additional five years of service.

The system would enable Saturn customers to make service arrangements and track their cars' service histories via the Internet. More than 400 Saturn dealerships will use the system to track inventory, obtain the most recent financing and lease information, download contracts and answer consumers' questions.

Customers can also purchase cars using the system, though that isn't its primary purpose. Rather, by creating a tool that enables customers to schedule service appointments and even test-drives, Saturn can take the relationship between retailers and customers "to a new level," Saturn Vice President Jill Lajdziak said.

If customers use the system to make purchases, it won't be at the expense of the middleman, she added. "Retailers will be an integral part of the transaction process," said Lajdziak.

The system is an ambitious project that's unique in that it involves both building customer relationship management and order tracking systems, said Cormac Foster, an analyst at Jupiter Communications Inc.

Though the project's two-year time frame is like light-years in Internet time, it might be a realistic time line considering that the network of dealers in the automotive industry adds a layer of complexity to any information technology project. "When you have that many [dealer] sites, you can't expect to get anything up and running in less time. If you're a content site on the Web, it's a much lower risk than a car dealership changing the way they sell cars," said Foster.

AT A GLANCE

## A Different Kind of System

*Saturn's customer service and inventory management system*

- Will take 15 months to develop and one year to deploy and cost almost $300M
- Will support more than 400 dealerships and be used by more than 15 000 Saturn employees
- Vendors working on the project include Computer Sciences, Reynolds and Reynolds and Siebel Systems

# Lack of IT Integration a Factor in HMO Crisis

*Harvard Pilgrim Health now in receivership*

BY JULEKHA DASH

Once seen as a bellwether HMO, Harvard Pilgrim Health Care's spiraling financial descent culminated in a court-ordered receivership this month. One big reason for the Brookline, Mass.-based insurer's failure: its inability to properly manage its information systems, particularly as it acquired other insurers.

State officials claimed that Harvard Pilgrim's 1999 losses ranged from $150 million to $177 million. The health maintenance organization had earlier projected that losses would be $137 million. In a statement, Harvard Pilgrim blamed the discrepancy on "errors in past accounting practices."

Harvard Pilgrim deferred comments to the Massachusetts Insurance Commissioner's office.

Harvard Pilgrim had separate financial and billing systems and never fully integrated them, said Christopher Goetcheus, a spokesman at the insurance commissioner's office. As a result, the insurer priced its services far ahead of when it actually collected premiums and, in some cases, undercharged for its services, he said.

That's not a new problem, said one analyst.

"A lot of HMOs in the past 10 years have grown too quickly and can't manage their growth properly," said Melissa Gannon, vice president at Weiss Ratings Inc. in Palm Beach Gardens, Fla.

Harvard Pilgrim was formed by the merger of Harvard Community Health Plan and Pilgrim Health Plan (HCHP) in 1994. HCHP had acquired two Rhode Island groups previously.

Harvard Pilgrim "didn't have the time or resources, or the skill set" to integrate the systems from the merged organizations, said Mark Anderson, a vice president at Meta Group Inc.'s Boston office and a former hospital CIO. He said he thinks that's why Harvard Pilgrim announced Oct. 5 that it had signed a $700 million, 10-year contract with Dallas-based Perot Systems Corp. to manage its claims processing and computer systems.

Perot continues to provide claims and information technology services, said Goetcheus.

# FedEx Plans Customizable Delivery for Online Shoppers

BY LINDA ROSENCRANCE

In a bid to stay competitive with rival United Parcel Service of America Inc., Memphis-based Federal Express Corp. is launching a new home delivery service designed for online shoppers.

FedEx Home Delivery, which rolls out March 15 in 50 major U.S. cities, will allow consumers to customize delivery days and times, including scheduling deliveries by appointment on Saturdays and evenings. The new service is part of FedEx's $100 million restructuring effort.

Roger Gellis, director of operations at FedEx Home Delivery, said the delivery system will collect consumers' specific delivery information from Web shopping sites. FedEx will transmit the information to one of its regional delivery facilities, where it will be printed and then become part of a driver's delivery manifest.

An automated vehicle routing system will use the customer information to determine which packages should go on which vehicles as well as the delivery routes drivers should take and their sequence of stops, Gellis said.

Gellis said FedEx will also use a geographical information system to generate computerized maps and turn-by-turn directions for each driver. He said the technology would ensure that drivers cover the fewest miles in the shortest time.

# E-Commerce Helps Drive Record Results

BY MATT HAMBLEN AND LEE COPELAND

GM, reporting record sales and earnings for last year, credited its e-commerce ventures in part for its strong financial showing.

GM reported 1999 revenue of $176 billion, up 13.6% from 1998, and earnings of $5.6 billion, up from $3 billion.

The report came as GM in Detroit and Commerce One Inc. in Walnut Creek, Calif., announced an agreement to incorporate the business-to-business supply-chain management services of i2 Technologies Inc. in Dallas into the GM TradeXchange open online marketplace.

GM said the deal will help move its global supply chain to the site. The automaker spends $87 billion annually with 30,000 suppliers worldwide.

The i2 capability would give the GM/Commerce One exchange the same supply-chain planning capability that Ford Motor Co. and Oracle Corp. plan to offer online.

The i2 deal will allow GM to "be able to quickly create stronger, leaner and more efficient supply chains," according to Harold Kutner, GM group vice president of worldwide purchasing.

"The goal with GM TradeXchange is not to move the costs around the supply chain, but to reduce the costs of all our suppliers," he said.

GM Chairman John F. Smith Jr. listed the automaker's "aggressive move into e-commerce, including the establishment of e-GM and GM TradeXchange," as "being very significant" among several steps responsible for the rise in sales and profits last year.

He also attributed the gains to GM's corporate restructuring, which separated GM from Delphi Automotive Systems, Hughes Defense and Electronic Data Systems Corp., as well as global integration of auto operations.

Industry analyst Laurie Orlov at Forrester Research Inc. in Boston said GM's procurement efforts can lower supply costs. But she said she questions the long-term benefits of a major automaker's pursuing a separate e-commerce business.

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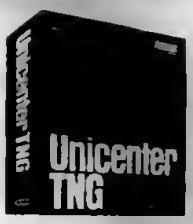


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# BRIEFS

## Centralized Intruder Detection Tool

Tripwire Inc. in Portland, Ore., announced the release of its Tripwire Enterprise Control Manager, which lets systems administrators remotely manage and monitor corporate servers and workstations. The product enables target-based intrusion detection, damage assessment, recovery and policy compliance across mixed operating environments from a central location.

## IBM Unveils RS/6000s

IBM this week will announce new low-end servers and workstations, with the introduction of its RS/6000 Model 270 and Model 170 Unix systems. The Model 270 is based on IBM's copper-based Power3 chip architecture. It will support as many as four processors, 8GB of RAM and 54.8GB of disk storage. The uniprocessor Model 170 system is based on the same chip and can handle 2GB of memory and 72GB of storage.

## Internet Use Growing

NetRatings, the Internet measurement service from New York-based Nielsen Media Research Inc., has reported that the number of U.S.-based users who have Internet access at home increased 22.7% in 1999 over the previous year, to 119 million. In addition, the Internet gender gap narrowed, with more women going online.

## Citrix Links to Unix

Citrix Systems Inc. in Fort Lauderdale, Fla., is bringing its MetaFrame thin-client environment to Unix, allowing client systems that run the Citrix ICA protocol to access Windows, Unix and Java applications. A Solaris version will ship by the end of the quarter, with other Unix versions to follow.

## Town Goes Dot-com

Online retailer Half.com Inc. struck a deal with a small Oregon town to rename itself. Halfway, Ore. will be known as Half.com for a year. In return, the Conshohocken, Pa., retailer will donate money and computers to the town's school system.

# Congress' IT Agenda Tackles Privacy, Visas

*Web site rules at issue; computer industry also lobbies lawmakers on high-tech trade*

BY PATRICK THIBODEAU

CONGRESS reconvenes this week prepared to consider a host of information technology-related issues. It's a potential legislative minefield for many companies, especially where online privacy issues are concerned.

But Congress may also provide relief for companies seeking increases in the H-1B visa cap. Final approval for digital signature legislation is also possible (see box).

Online privacy will probably be the top issue. A number of bills to protect consumers will be considered, such as one introduced by Sens. Conrad Burns (R-Mont.) and Ron Wyden (D-Ore.) that would require Web sites to give consumers the right to opt out of having information collected about them or shared with third parties.

Such government regulations could force companies to alter their Web sites and the back-end systems that are tied to them.

"Americans are fanatical about privacy. It's up there with God, in some respects," said John Palafoutas, vice president of the American Electronics Association in Washington.

"If companies want to avoid bad legislation, they are going to have to self-regulate," said Palafoutas. "The members, especially in an election year, are oot going to take a whole lot of heat on the issue."

Richard Laner, information systems manager at Miners Colfax Medical Center in Ratone, N.M., said the government should generally avoid regulation. "The inteotions are sometimes good, but when you start regulating everything, it starts getting too complicated," he said.

### Opportunities Abroad

A major effort will also be made to increase the current H-1B annual visa program cap from 115,000 to 200,000 visas. U.S. companies have used this program to hire skilled technology workers from foreign countries.

Industry trade associations and the White House also intend to lobby to lift trade restrictions against China. Such a move would lead to the reduction of tariffs on high-tecb goods while expanding the market for China's exports.

"China has a lot of faults, [and] China has a lot of problems, but it is also the world's largest country," said Harris Miller, president of the Information Technology Association of America in Arlington, Va. "If United States companies can't fully engage in opportunities in the Chinese marketplace, then our competitors will."

Meadville, Pa.-based Seco/Warwick Corp., which sells industrial furnaces, has an office in China. Tom Holland, information systems manager at Seco/Warwick, said that while the trade restrictions haven't affected the company's products, they should be lifted.

"China and the whole Asian market, we feel, is just waiting to be tapped," be said. ▶

# Microsoft Aims Antitrust Rebuttal at Appeals Court

*Counters judge's monopoly finding*

BY PATRICK THIBODEAU
WASHINGTON

Microsoft Corp. is probably beyond the point of being able to change the mind of antitrust trial judge Thomas Penfield Jackson. So last week the company tried out tbe legal arguments it may use in future court appeals.

In new court papers filed in U.S. District Court here, Microsoft argued that it isn't a monopoly and that it did'o't break any laws, illegally tie its browser to Windows or monopolize the PC operating system market.

"Having an extremely popular product does not make a company a monopolist," Microsoft said.

Jackson, in his findings of fact issued in November, saw it differently and is almost certain to decide that the software firm violated antitrust law.

Yee Wah Chin, an antitrust attorney at Squadron, Ellenoff, Plesent & Sheinfeld LLP in New York, said Microsoft is "setting the foundation for arguments" it will raise on appeal.

### Small Victories

"I don't think Microsoft's most rabid legal supporter expects them to win everything on appeal," said Rich Gray, an antitrust lawyer at Outside General Counsel of Silicon Valley in Menlo Park, Calif. But Microsoft is trying to "set up sufficient arguments, so that on appeal any remedy that is imposed oo them is something they can live with — that's a Microsoft victory," he added.

The two sides are involved in settlement talks with a mediator. They are due back in court Feb. 22 for more arguments. A verdict will follow. ▶

## Capitol Hill's IT Agenda

*When Congress returns this week, lawmakers will be dealing with a variety of IT-related issues:*

**Privacy**
Companies and trade associations will be called before congressional committees to defend "self-regulation" of online privacy. A variety of bills will be introduced to impose some regulation on Internet commerce to protect consumers.

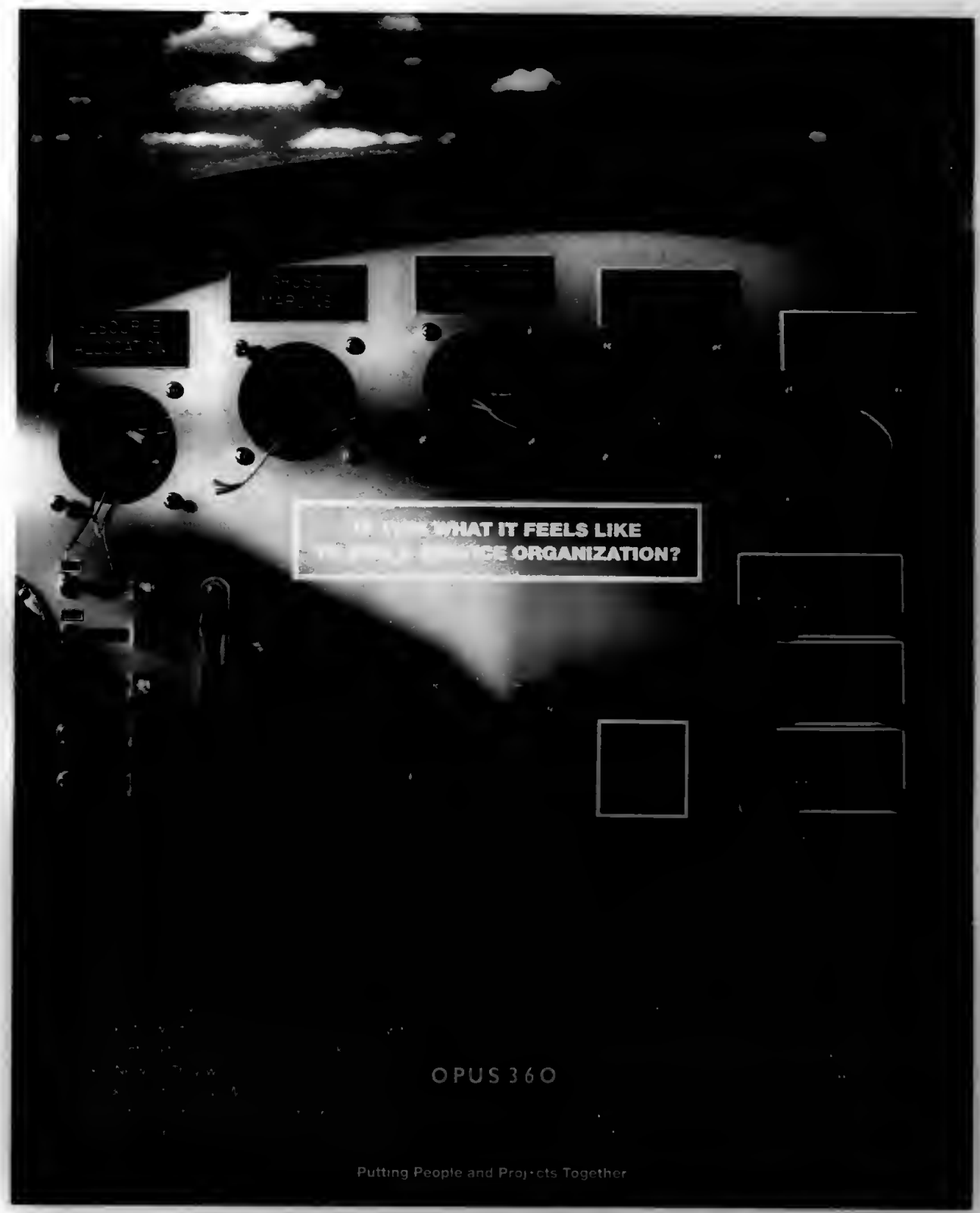
**H-1B Visas**
There will be a renewed push to raise the H-1B visa cap, the main vehicle for companies to hire foreign high-tech workers. Sen. Phil Gramm (R-Texas) and Senate Majority Leader Trent Lott (R-Miss.) want the current ceiling raised from 115,000 to 200,000 visas. House leaders have been less enthusiastic.

**China**
Industry groups will join the White House to get Congress to lift trade barriers against China. This is a top goal for high-tech companies, which have been hurt by high tariffs on products they want to sell in the world's most populous country.

**Information Security**
Protection of critical infrastructure — utilities, finance and transportation — is going to get more congressional attention, now that the year 2000 problem has come and gone. Congress will be asked by the White House to fund information security training, as well as research and development projects.

**Digital Signatures**
The House and Senate each passed bills last year that would put electronic signatures on par with written ones. The bills are now in conference. But there's s threat of a White House veto over consumer protection provisions in the bills.

**Internet Taxation**
Congress isn't expected to take this issue up until the congressionally appointed Advisory Commission on Electronic Commerce completes its work this spring. But in an election year, anything's possible.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# Order Entry Flexibility an ERP Issue

BY CRAIG STEOMAN

Even at this advanced stage in the development of ERP systems, some users are discovering that the software isn't flexible enough to handle all of their needs for order entry and processing.

Take the General Council of the Assemblies of God, for example. Late last month, the Springfield, Mo.-based organization of more than 11,000 Protestant churches delayed an installation of Oracle Corp.'s enterprise resource planning (ERP) system after learning the order entry module couldn't handle a list of 16 functions needed by its catalog sales operation.

Andrew Hadden, manager of information services planning and administration at the council, said the organization was told up front that a small piece of the order entry software needed to be customized. But after the extent of the functionality gap came to light, he added, Oracle's cost estimate for the tailoring grew to $600,000.

While the council tries to figure out what to do, the ERP rollout is on hold except for a purchasing application that's due to go live in March.

Such problems aren't unique to Oracle. Companies using applications from PeopleSoft Inc. and SAP AG also said the order entry modules don't do everything their businesses require.

Standard Register Co., which prints business forms and provides document management services, is starting to install PeopleSoft's financial and human resources applications as part of a $55.5 million overhaul of its systems.

But Donna Beladi, corporate vice president of business development at Standard Register, said the Dayton, Ohio, company is still exploring different order entry options.

"I don't believe PeopleSoft will be the solution for that piece," Beladi said. ERP order entry software may be a good fit for companies that build a standard set of products, "but it's not for a custom manufacturer like us," she said.

Byron Miller, an analyst at Giga Information Group Inc. in Cambridge, Mass., said the growth of Internet-based sales and build-to-order manufacturing is putting increasing pressure on packaged order entry applications.

The Assemblies of God's general council thought it was all set. "We relied on Oracle's sales team to tell us whether their software could do this or not," Hadden said. "We just feel like we've been burned."

Some of the issues should be resolved by a new order management module Oracle is due to ship in May, Hadden said. But council officials don't think the $600,000 customization bill would be reduced even by half, he said.

Oracle officials promised to work with the church council but said many of the features requested are unique to its catalog business and oriented more to consumer sales than its order entry software was designed for. ◗

## Missing Pieces

***Assemblies of God found that Oracle's order entry software can't do the following:***

- Automatically identify customers who require purchase orders and alert order-takers
- Check inventories while customers are on the phone
- Print messages on invoices to tell buyers when products have been back-ordered or discontinued
- Automatically substitute items

# Novell Readies E-Business Software

BY DOMINIQUE DECKMYN

On Feb. 8, Novell Inc. is expected to take the wraps off its iChain electronic-business software, which analysts say is a critical release for the company.

Novell needs to grow beyond its dwindling NetWare file and print market, but observers said they doubted its ability to succeed in the e-commerce arena and make iChain a standard.

IChain will be the first incarnation of Novell's attempt to take its Novell Directory Services (NDS) outside the firewall and position it as a tool for managing e-commerce relationships. The software will be aimed at supply-chain relationships.

Analyst Dana Gardner at Aberdeen Group Inc. in Boston said iChain demonstrates the benefit of directory-enabled applications. But Gardner said he expects it to appeal mainly to Novell's installed base.

"Novell has to find other business opportunities" outside NetWare, said analyst Steve Kleynhans at Meta Group Inc. in Stamford, Conn. "The iChain initiative is a positive step in that it proves you can take a directory out and use it as an e-business platform."

But Kleynhans said e-commerce "is not an area where Novell has lots of presence." And Novell has always been weak at marketing, he added.

Rob White, manager of technical support at offshore drilling company Global Marine Inc. in Houston, said the iChain concept sounds promising. "But can we force our suppliers to implement it?" White said Global is very satisfied with NDS as an internal tool, but he wondered whether Novell will have the clout to realize its ambitions. ◗

## Market Shift

***Dwindling NetWare sales are forcing Novell to find new markets.***

**NetWare sales will fall from $3.2B in 1998 to $1.2B in 2004.**

**Win NT and 2000 sales will grow from $6.7B to $21.8B in 2004.**

SOURCE: GARTNER GROUP INC., STAMFORD, CONN.

# Order Entry Flexibility an ERP Issue

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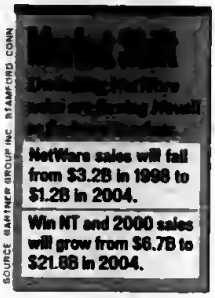

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# Transmeta Introduces Pentium-like Crusoe Chip

*Technology for wireless apps relies on software*

BY CYNTHIA MORGAN

TRANSMETA CORP took the wraps off the top-secret Crusoe chip last week, revealing a processor with extremely low power consumption that can run Intel Corp. Pentium-compatible applications.

Corporate users said they're hoping the chip can hasten the arrival of small, wireless, mobile computers capable of running full-fledged PC software.

Crusoe's low power consumption is truly revolutionary, said one analyst, but he added that much of the rest of the chip is old technology that may have potential memory and performance problems.

The Crusoe chip gets around Intel's Pentium patents by processing X86 instructions in its accompanying software, translating them into simpler instructions that the chip can execute very quickly, said Tom Halfhill, senior editor of "The Microprocessor Report" newsletter in Sunnyvale, Calif.

"It's a just-in-time compiler that emulates an X86 processor," he said.

The chip may also require 16MB or more of computer memory simply to process instructions, which could impact its use in smaller devices, Halfhill said. "The first test results we've seen suggest it will run at about half the speed of an equivalent Pentium II processor," he said.

Mark Fleischmann, Transmeta's software program manager, said subsequent Crusoe processors would likely overcome the memory problem. "We think our 700-MHz processor will run faster than a 500-MHz Pentium III," Fleischmann said.

"Cutting the cord — the power cord — is what makes the Crusoe exciting for us," said John Lester, information systems director at Boston's Massachusetts General Hospital's neurology department.

"We want our employees to be with patients, not off in the corner with computers, so we're investing heavily in wireless mobile technology to get there," Lester said. "Crusoe is a very positive step."

Santa Clara-based Transmeta announced the first two chips in the Crusoe family. First is the 400-MHz TM3120, intended for use in Linux-based Internet appliances, handheld computers and other small devices. The second, the 700-MHz TM5400, was designed for use in ultralight Windows notebook computers.

"Just being X86-compatible gives Crusoe a real appeal," said Robert Zinnel, chief technologist at GTE Intelligent Networking in Irving, Texas. "Every application you'd want is already written for it."

Prototypes of the first Crusoe-powered devices could appear by fall. S3 Inc.'s Diamond Multimedia division in Santa Clara, Calif., announced plans to release Crusoe devices by early next year. The first Crusoe products, Internet access devices known as webpads, will sell for less than $1,000.

Zinnel said the chips' ability to produce lightweight, fully functional PCs could spur wireless networking in offices.

An experiment five years ago failed, he said. "Nobody would carry a heavy laptop around all day."

## Transmeta's Crusoe Chip

**What it is:** A new line of microprocessors that process most of their instructions in software so that they use less power, take up less space and cost less money to manufacture than standard PC processors

**What it means:** Could make it possible to build tiny, lightweight Internet appliances that run Windows applications

**Rivals:** Intel's mobile Pentium processors and handheld chips from Hitachi, Intel, Sun and others

**Transmeta founders:** Microsoft co-founder Paul Allen, international hedge fund wizard George Soros, Linux inventor Linus Torvalds, Sun UltraSPARC designer David Ditzell

# E-Commerce Nets, Voice Over IP Head ComNet Topics

BY JAMES COPE

Some 50,000 network managers and information technology brethren will come out of Y2K hibernation to attend this week's ComNet 2000 show in Washington. On their shopping list: new infrastructure that will support e-commerce and robust business-to-business communications over the coming decade, observers said.

Also, there's plenty of talk about sending voice over data networks, at least from vendors that are selling voice-enabling equipment.

Bill Laberis, chairman of this year's ComNet and a *Computerworld* columnist, said building e-commerce pipes is the order of the day for networking professionals now that Y2K has passed. "Construction of networks for a radically different means of doing business is what will [drive] 90% of what goes on in networking for the next 18 to 24 months," he said.

The coming wave of networking is all about "speed, speed and speed — faster processors and more bandwidth," said Scott Sherer, president of the Milwaukee-based Network and Systems Professionals Association.

The need for more bandwidth may push midsize users into deployment of Gigabit Ethernet over copper, but larger enterprises will be looking to optical networks, too, said Michael Speyer, an analyst at The Yankee Group in Boston.

Cisco Systems Inc., Lucent Technologies Inc. and Nortel Networks have all made optical announcements this past year, and a bunch of optical networking start-ups are in the wings, Speyer noted.

Other approaches to optimizing bandwidth, such as a policy management application from 3Com Corp. and caching technologies from Expand Networks Inc. in New York, will be presented at ComNet.

Vendors also foresee a buzz about convergence — sending both voice and data over data networks, according to an informal *Computerworld* poll. And while some companies will be pushing voice over IP, widespread adoption of that technology is probably two years out for about 60% of big companies, said Speyer. Dikran Kassabian, a technical director at the University of Pennsylvania, said voice over IP is viable for smaller companies, where traffic management can be handled through excess bandwidth provisioning but not on a much larger scale.

Still, voice over IP will get a lot of play at ComNet this year. Nuera Communications Inc. in San Diego, for example, has joined with several other companies to demonstrate protocols that further the cause for voice over IP. And Paris-based Alcatel will introduce its OmniPCX, an integrated communications server that handles voice, fax and e-mail.

# Judge Bars Posting of DVD Decoding Apps

BY ANN HARRISON

A federal judge last week granted the request of eight motion picture studios when he issued a preliminary injunction that will force three Web site operators to remove a software program that breaks the encoding system used for digital video discs (DVD).

The ruling, handed down by U.S. District Court Judge Lewis A. Kaplan of the Southern District of New York, forces three New York defendants to immediately remove the DeCSS software utility from their Web sites or face contempt of court charges. A similar complaint yet to be decided was also filed in Connecticut.

"Judge Kaplan's ruling represents a great victory for creative artists, consumers and copyright owners everywhere," said Jack Valenti, president and CEO of the Los Angeles-based Motion Picture Association of America (MPAA). "I think this serves as a wake-up call to anyone who contemplates stealing intellectual property."

MPAA argued that DeCSS violated the "anticircumvention" provisions of the Digital Millennium Copyright Act of 1998. The preliminary injunctions were contested by the Electronic Frontier Foundation (EFF) in San Francisco, which claims the MPAA is trying to suppress discussion of DVD insecurity, violating free speech protections in the First Amendment. There have been no reported cases of consumers making unauthorized copies of DVDs using the software.

EFF is leading the defense in another DVD case filed in California Dec. 28 by the DVD Copy Control Association Inc., accusing 72 site operators of posting or linking to the DeCSS utility.

OPEN

# BRIEFS

## SAP Ports to Linux

**SAP AG said a promised Linux version of its R/3 applications has started shipping and is in the hands of more than 100 customers. The German vendor added that its data warehousing and online procurement packages are scheduled to get support for the open-source operating system by midyear.**

## Transaction Partners

**Resonate Inc. and Whale Communications have announced a partnership to offer high-performance secure communications between external electronic-business transactions and back-office data.**

**Whale's e-Gap secure platform shuttles transactions between extranet and supply-chain applications, eliminating a need to open a hole in an organization's firewall. Resonate's technology will provide high availability and scalable performance capabilities.**

## IBM Inventory Apps

**IBM and Swedish software vendor Industri-Matematik International Corp. plan to announce a combined set of inventory replenishment applications aimed at retailers. The software, which is supposed to let users build plans for restocking store shelves based on actual purchases, starts at about $1 million.**

## HP's Self-Help Desk

**Hewlett-Packard Co. unveiled a Web-based technical support service designed to make it easier for end users to troubleshoot and fix many hardware and software problems themselves. The Instant Support Web portal, available in April to HP customers, will help users self-diagnose problems on PCs, printers, mobile computers and workstations.**

## Short Takes

**INFORMIX CORP. has announced it will sell Virage Inc. video indexing products to worldwide broadcast and related markets. . . .**

**EXCHANGE APPLICATIONS INC. has released eXstatic 2.0 eCampaign Designer, a permission-based e-mail marketing tool for real-time reporting.**

# Users Go Slow on Domino R5

*Few have migrated; Lotus demos Raven*

BY LEE COPELAND
ORLANDO

While analysts and users lauded Lotus Development Corp.'s knowledge management initiative, laid out at its annual user conference here last week, many users said they were too busy migrating to Notes/ Domino Release 5.0 to embrace it.

At Lotusphere 2000, the groupware maker sought out support for Raven, its alpha-stage knowledge management server. Styled as a portal, the stand-alone product offers search, automated user profiling, expertise-location and instant messaging features.

### Raven is Appealing

Jim Bird, an information systems adviser at The Boeing Co. in Seattle, said Raven's functionality is appealing.

"There is so much data that is so disparate across the company. We need a way to get to our data easily and get it to the people that need access to it. Raven seems to be one of those types of tools that could help us," said Bird.

But like the vast majority of organizations that use Notes/ Domino for messaging, Boeing has yet to migrate its Lotus messaging seats to Version 5.0. The aerospace giant uses Microsoft Corp.'s Exchange server for most of its e-mail needs, but uses Notes/Domino in a few departmeots, Bird said.

Lotus officials estimate that roughly one-quarter of the company's installed base has migrated to R5 since it was released last April. Lotus cites its Notes installed base as 56 million seat licenses for end users.

Corporate users said the combination of Y2K-compliance chores and the need to move to a hierarchical naming structure in R5 slowed down the migration process.

Earlier versions of Notes/ Domino accepted a flat-use naming convention.

R5 requires hierarchical naming that includes organizational units in the following format: first_lastname@company.com/location.

"We went through that pain and anguish last year, so we're in a position to migrate now," Bird added.

Gresham Andrews, Notes administrator at Seagate Technology Inc., started migrating the 25,000 Notes users at the Scotts Valley, Calif.-based storage drive maker to R5 two weeks ago. "We always wait for products to become more stable and get the bugs out," said Andrews. "We were also a flat environment, and we had to move to the hierarchical system. Planning was six months, and then it took about three months of actual work."

As for Raven, some users said they plan to take a wait-and-see approach to the new technology.

Lotus has made "a big push for knowledge management with Raven, but whether it will do the job remains to be seen," said Anita Moore, manager of network administration at Discovery Communications Inc., a cable channel operator in Bethesda, Md. ▶

## Domino to Support Microsoft Outlook

At Lotusphere 2000 last week, Lotus pledged it would support Microsoft Corp.'s Outlook client, enhance its Web tools and offer tighter integration between Domino Server and IBM's WebSphere application server.

Lotus officials offered few details on development plans around Microsoft's desktop client, except to say that the deal lets users access Domino calendaring and messaging from Outlook.

Lotus also said it will release later this year an iNotes client that will integrate Web browser and Outlook capabilities and offer offline services, such as data replication to a PC not connected to the Domino server.

Web browser support is important, said Ralph Spencer, Lotus Notes administrator for aircraft certification at the Federal Aviation Administration. "We want to move toward a Web-based user interface . . . with sufficient security, like authentication and verification," he said.

Lotus also demonstrated its Domino Designer tools for Web development and outlined its plans to integrate Domino back- and functionality with IBM's WebSphere.

Eric Veller, an information systems engineer at The Mutual of Omaha Cos. in Omaha, said he liked the server enhancements and tools demonstrated at the show but also wanted firmer commitments about delivery and beta availability dates from Lotus.

*– Lee Copeland*

LOTUSPHERE 2000

## Lotus Users' Picks & Pans

**PICKS**

- Web-based access to Raven data stores
- Web development focus for Domino
- Improved printing for Notes Calendar
- New CEO Al Zollar

**PANS**

- Product sessions not technical enough
- No beta for Raven or iNotes clients
- Microsoft Outlook support still fuzzy

SOURCE: USER INTERVIEWS

**MORE THIS ISSUE**
New Lotus CEO Al Zollar says he will preserve innovation. **See page 24.**

# Siebel Buys Paragren, Helps Bell Canada

*Acquisition rounds out Siebel's marketing segment of CRM suite*

BY ROBIN ROBINSON

Bell Canada received a bit of good news last week when it learned that it won't have to take on the task of integrating its sales force automation and marketing-campaign management applications next year.

Instead, most of that integration work will be done by developer Siebel Systems Inc., which bought campaign management developer Paragreo Technologies Inc. last week.

Siebel said the companies' products will be combined in Siebel's customer relationship management (CRM) suite in a release due out this summer.

Some customers, including Finnish mobile telecommunications company Sonera Corp., have already integrated core applications from the two companies to build a CRM suite that includes sales, service and marketing functions.

With the Paragren acquisition, Siebel, based in San Mateo, Calif., solidified its top spot among CRM vendors, said Judy Hodges, a CRM analyst at International Data Corp. in Framingham, Mass.

Siebel has gobbled its way to its position in the market by buying other companies such as call center management developer Scopus Technology Inc., which it purchased in 1998. Paragren, based in Reston, Va., is a leader in the campaign management niche, and it has partnered with Siebel in the past, Hodges said.

Montreal-based Bell Canada decided in 1998 to purchase Siebel's sales force automation tools and Paragren's One-to-One campaign management tool for its face-to-face sales force, said Allana Brown, an associate director of information technology at Bell Canada.

After completing the implementation late last year, Bell Canada decided to integrate the two products to funnel data gathered from the Siebel application into Paragren's for further refinement. The news that Siebel will do the integration is "extremely appealing," said Brown. "That way, your own IT shop isn't hindered." ▶

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# Oracle Ships Fail-Safe Feature

*But target users say it's too costly*

BY ROBIN ROBINSON

ORACLE CORP. said it will begin shipping today a parallel fail-safe configuration for the Oracle 8i database that would dramatically reduce fail-over time from 30 minutes to as little as 30 seconds.

The application service providers the product is targeting said they need that level of reliability, but they may not be able to afford either the $100,000-plus price tag or the database administrators to keep it running. Also, unless their operations are running on Hewlett-Packard Co.'s HP 9000 Unix platform, they will have to wait at least six months for a version of the database configured to their platform.

Currently, users who need to keep systems running use redundant systems. "We're relying on the hardware to be reliable," said Jim Cavalieri, vice president of system engineering at Salesforce.com Inc. in San Francisco.

Jim Lidestri, president of Interliant Inc., an application service provider in Purchase, N.Y., said every component through every segment of the chain he supports must have redundancy. "It's much easier on the hardware side. But the software side — that tends to be the problem: the scalability or the reliability of the application itself," Lidestri said.

The parallel fail-safe feature uses in-memory database technology, said Anne Thomas Manes, an analyst at The Patricia Seybold Group in Boston.

When a system crashes, data in memory but not written to the disc can be lost completely or require intensive administration between the production database and the backup database to recover it. Recovery times can be 30 minutes or longer as information is compared and updated between the database versions, she said.

"The parallel server fail-safe has the ability to dynamically flash the state [of data] that's ... running in one machine to the other," Manes said. "It gives you a much faster recovery time. They're saying that they can do this in 30 seconds. That's a real 'wow' factor."

But the technology may be unaffordable for many, Cavalieri said. "Parallel servers today are expensive, and it's difficult to get database administrators for running in that environment," he said. "The software is expensive, the hardware it runs on is expensive, and it requires a more specialized database administrator. It's hard enough to find an Oracle DBA. It's even harder to find an Oracle DBA with parallel server experience."

*Continued from page 1*

## E-Receipts

The Digital Receipt Alliance, which includes Visa, Office Depot, America Online Inc., Microsoft Corp. and Hewlett-Packard Co.'s VeriFone division, submitted the proposed standard for digital receipts to the National Retail Federation's technology standards body.

The XML-based receipts would contain transaction data, hyperlinks to a retailer's and product manufacturer's Web sites and, potentially, targeted discount offers and promotions. They could be delivered via e-mail or over the Internet for purchases made either online or in brick-and-mortar stores.

Jim Greene, a senior product manager at Dayton, Ohio-based NCR, predicted that digital receipts will become available within a year to 18 months and gain a foothold once a few major retailers in different shopping segments adopt them.

He said retailers stand to gain numerous benefits, including the capture of receipt data, a digital platform for communication and a linking mechanism for small applications, such as rebates and warranty information. "It's a great innovation for retailers that have brick-and-mortar operations that want to reach the online consumer," Greene said.

Raymond Burke, a business school professor at Indiana University who studies retailing, said he can envision a retailer using the information gathered to offer consumers profiles of the nutritional merits of their diets or advice on wardrobe planning. He further predicted that digital receipt databases will be better than those used in retailers' frequent-shopper programs, because they will track both in-store and online purchases "so you get a richer picture of consumer behavior," he said.

"It's also going to be better because this database is going to be private, so the consumer will be more willing to augment it with personal information like financial goals or lifestyle information or what they're interested in shopping for, without fear of being inundated with unwanted promotional messages," Burke added.

George Grant, a consultant at Musicland Stores Corp. who works for Minneapolis-based Wireless Network Solutions Inc., said the digital receipts could "break the ice" for brick-and-mortar shoppers by getting them to test the Internet to check out retailers' receipts and associated coupons and promotions.

"They have a reason to go online, and they're right on your Web site," Grant said.

The prospect of digital receipts is extremely appealing to Brian Hume, president of Martec International Inc., a retail consultancy in Atlanta. Hume, who hails from Great Britain, said his wife gave him an expensive watch for his birthday, but she left the receipt for the watch, which was purchased in the U.S., in England. When the watchband broke nine months later, he returned it to the store and didn't have the receipt. "I'd find [digital receipts] very useful," Hume said, adding that he would also use them to help reconcile business expenses.

However, one analyst questioned consumer need. "That seems like a solution looking for a problem. We've never had consumers complain about the lack of digital receipts," said Nicole Vanderbilt, an analyst at Jupiter Communications Inc. in New York. "I'm skeptical of the value for the consumers, but I see the clear value for retailers."

*Continued from page 1*

## Domain Names

National Basketball Association discover them as well. But he said he doesn't plan to keep the names. Klein, who runs a Web hosting and domain-name registration company, InternetCrusade in San Diego, said he registered those names to make a point, not a profit.

"When we found out you could register extended names, it became apparent to us that there were a lot of missed opportunities," said Klein.

Until last fall, domain names were limited to 22 characters plus the top-level domains such as .com, .org or .net. This new ability to register long domain names opens up issues for companies with long corporate names and slogans.

"I think companies should aggressively register their slogans," said Jim Grady, an analyst at Giga Information Group Inc. in Cambridge, Mass. "If the capability is there, they should take advantage of it, because somebody else will."

But so far, only a handful of registrars offer the means to register names up to 63 characters plus top-level domains. You can't register a long name yet with Herndon, Va.-based Network Solutions Inc. (NSI), which said it plans to offer the service in the "near term." Registrars offering this capability include Internet Domain Registrars in San Francisco, which started last month, and Register.com Inc. in New York, which began this month.

According to a spokeswoman at The Internet Corporation for Assigned Names and Numbers in Marina del Ray, Calif., the Internet Engineering Task Force had a system for using 63-character names that was put to use. The development of the shared registry system that ended NSI's exclusive registration franchise allowed the use of longer names.

There are some technical problems with using long domain names. Older versions of some browsers may not support long names, and not all Web hosting companies can host them, said officials at registration companies.

People who register trademark names or slogans face legal peril. The Geneva-based World Intellectual Property Organization this month ordered the domain name worldwrestlingfederation.com transferred to its trademark owners after someone registered it and offered to sell it back at significant profit (see story, page 24). Last year, the U.S. adopted a cybersquatting law to prevent trademark infringements.

Klein said he believes long domain names will be important when people use voice to communicate with PCs. That's why he registered isthereadoctorinthehouse.com.

## Digital Receipts: How They'd Work

*A typical scenario:*

- A shopper making a purchase can opt to provide an e-mail address and identification information at the point of sale.
- Brick-and-mortar shoppers may choose to have data affixed to customer loyalty cards or the magnetic strips on the backs of credit cards.
- When a purchase is made, transaction information is forwarded via network to the retailer's database server.
- Data identifier triggers the creation of another record (the digital receipt) in the retailer's digital receipt database server.
- Digital receipt database server is linked to an e-mail server or Web server. E-mail server would send receipt to customer's e-mail address, or the receipt could be posted to a Web server where the receipt is viewable through a browser.

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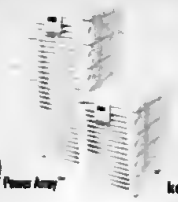

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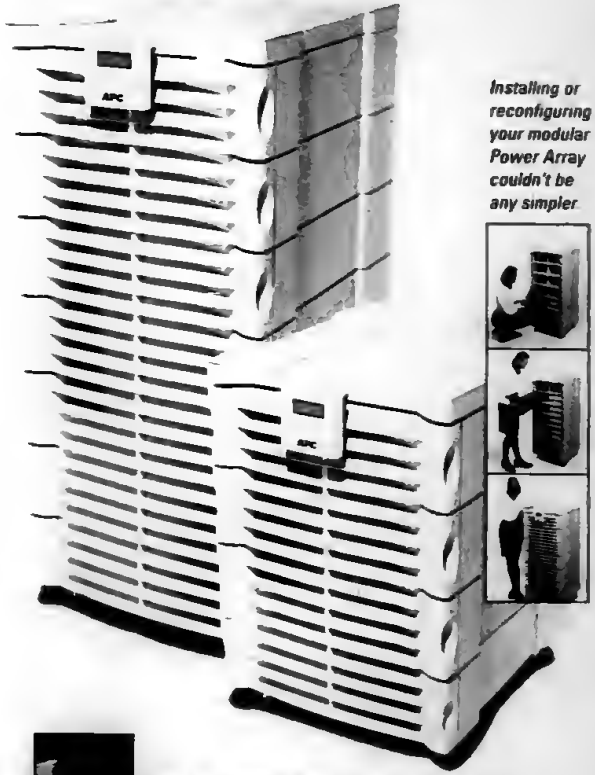

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# J. C. Penney to Add Online Auction Service

## *Seeks to lure e-shoppers with new features*

BY STACY COLLETT

SEEKING SOME of the sizzle created by eBay Inc. and other online auction sites, J. C. Penney and Co. is adding auctioning to its Web site.

Industry observers said it's just the beginning of a retail auction boom, as e-commerce sites attempt to attract more customers.

The Plano, Texas-based company later this spring will launch an auction service that lets consumers bid on overstocked merchandise from J. C. Penney catalogs and retail stores.

"The whole idea of auction came about just from looking at how successful the auction concept has been online," said Richard Last, Penney's executive vice president of e-commerce. "We saw it as a way of keeping the site interesting — a reason for customers to keep returning to the site. It also encourages people to stay on the site longer."

The retailer also plans to add several other "specialty shops" to its site this spring to attract customers.

Penney's online sales — $100 million last year — remain a small part of overall revenue. Its 1999 catalog sales totaled $4 billion.

But in 1998, online sales were just $15 million, and Last said he expects the company to continue its rapid online growth.

The auction also provides another channel, in addition to Penney's 37 outlet stores, to sell overstocked merchandise.

"With overstocks, any company looks at how much [money] you can recover," Last added.

### Not a Surprising Move

Industry observers said they weren't surprised by Penney's e-commerce strategy.

"We predict a lot of retailers on- and off-line will be adopting auctions this year," said Rebecca Nidositko, an analyst at The Yankee Group in Boston. "It's a great way to manage inventory ... generate excitement about an online site ... and test prices to find out what the market will bear."

The Yankee Group predicts sales at retail auction sites will reach $200 million this year and $2.1 billion by 2003.

Specialty item retailer The Sharper Image in San Francisco started auctioning off its returns, excess inventory and damaged items last February.

Other retailers, such as Dell Computer Corp., CompUSA Inc. and sports apparel and accessory retailer CBS SportsLine also have auction components on their Web sites.

"Variable pricing is going to take over and replace all but the most static of product categories," said Laurie Orlov, an analyst at Forrester Research Inc. in Cambridge, Mass. "It makes perfect sense to me, assuming they have the infrastructure support to handle it — the adequate amount of computer capability to have a lot of people bidding."

The auction's front-end operation will be outsourced to FairMarket Inc. in Woburn, Mass. Last said fulfillment will be handled by the five J. C. Penney centers already dedicated to catalog sales.

Other observers said branded auctions raise more channel conflict concerns.

"Does this diminish their brand if you can buy it from them at full price in one place, then the next day it's half-price [online]?" said Allen Bonde, an analyst at The Extraprise Group in Boston. "Traditionally, they would've funneled their merchandise through a third party — [and] that wouldn't have been directly tied to J. C. Penney."

# Survey: Veteran Web Users Happy With Holiday Shopping

## *Different study cites newbies' problems*

BY LINDA ROSENCRANCE

For the most part, customers were very happy with their online holiday shopping experiences last year, according to a survey released last week by Cognitiative Inc.

In fact, shoppers said they will buy more online this year, according to the San Francisco-based consulting firm's survey, "Pulse of the Customer."

"We will remember [the fourth quarter of] 1999 as the period when e-commerce got real traction in the mainstream U.S. population," Cognitiative President and CEO Laurie Windham said.

"Our data shows that many people relied on the Internet for their shopping. While we've all heard anecdotal horror stories about recent problems, in reality, the e-consumer seems very satisfied with their online holiday shopping experience," Windham said.

But Cognitiative's results stand in stark contrast to a survey conducted last month by San Francisco-based FleetBoston Robertson Stephens Inc.

That survey indicated that overall customer satisfaction declined as the holiday season progressed last year, particularly among shoppers visiting online toy stores.

The contradictions could be due to which shoppers were surveyed, said Emily Meehan, an analyst at The Yankee Group in Boston. "If first-time shoppers were surveyed, then they could have had lower expectations than more experienced online shoppers," she said.

However, it appears that just the opposite is true.

Cognitiative said it surveyed 600 mostly experienced online shoppers nationwide, while FleetBoston Robertson Stephens said it surveyed approximately 5,500 people, about 55% of them first-time shoppers.

According to Cognitiative's survey, products that fared well this season were those most often associated with retail sites on the Web, such as books, music, toys, clothing and software.

The survey said consumers had better online shopping experiences because there were more products to choose from, they had heard positive stories about online shopping from family and friends and they felt better about making purchases with credit cards. In addition, Cognitiative said, some consumers were swayed by the glut of online retailers' advertising and promotions.

According to Cognitiative, 83% of shoppers said the key benefit of online shopping was convenience, while 81% said it saved time and 51% said it saved money over purchasing items at brick-and-mortar stores.

# E-Commerce Appliances To Debut

BY LINDA ROSENCRANCE

Network Engines Inc. today plans to unveil the WebEngine Roadster, a low-cost, Intel-based server appliance that the company said will allow online businesses to provide Web content easily and reliably.

Roadster, like other Network Engines servers, is 1.75 in. high, allowing up to 40 servers to fit in a standard equipment rack. The server, which offers a full software suite, including Web publishing, e-mail and file-transfer services, works in large clusters and can scale up to 256 units.

Vernon Jordan, an analyst at Framingham, Mass.-based International Data Corp. (IDC), said Network Engines has demonstrated capabilities by "creating highly available scalable platforms" for Web-hosting server applications.

The Roadster LX costs $1,995. It will come with Red Hat Inc.'s Linux and Apache Web server software. The Roadster NT, priced at $2,695, will come preloaded with Windows NT and Microsoft Internet Information Server software. It will begin shipping in the first quarter.

Randolph, Mass.-based Network Engines will also unveil a new Internet Appliance Architecture that the company said will offer a different approach to conducting e-commerce.

The company said the new appliance architecture replaces multifunction servers with a series of application-specific appliances.

"These guys really get it," said James Gruener, managing director of Windows 2000 Platforms at Aberdeen Group Inc. in Boston. "They're making a product line that provides manageability, availability and better reliability features ... in a slim-designed Internet appliance server."

The Internet Appliance Architecture consists of four 1.75-in.-high Internet appliances, each dedicated to a specific task, Network Engines said. The server appliance comes installed with management software that notifies system managers if there's a problem.

The Internet Appliance Architecture is aimed at a worldwide appliance server market that will top $7.9 billion in revenues on more than 2 million units shipped by 2003, according to IDC.

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# Hurdles Remain Before SAN Likely to Gain Acceptance

*Analysts say new technology still needed to fuel storage market growth*

BY KATHLEEN OHLSON

STORAGE-AREA networking will finally come into its own in 2000 — provided customers and vendors understand the concept.

Customers want to know about storage-area networks (SAN) and be edocated beyond the veodor and media hype, said Mike Adams, an analyst at Cambridge, Mass.-based Giga Information Group Inc. Vendors must answer questions about the business benefits of SAN products, addressing the issues customers are facing and how the technology can help them, Adams said.

Juan Perez, a technology consultant for the New York-based Teachers Insurance and Annuity Association (TIAA), said he feels some frustration regarding SAN technology. Vendors are offering a few pieces of the technology puzzle, but there's no guarantee they will function together, he said. TIAA has a Fibre Channel direct connection to create a SAN, but Perez said the upgrade from a direct SCSI connection to a SAN environment won't be seamless.

"I want to find a real SAN that works with existing applications" such as Novell Inc.'s NetWare 4, which TIAA will upgrade to NetWare 5, and a custom imaging application, Perez said. "Companies claim they can do it, but it's not usable. I want an off-the-shelf product, not one that only works in a lab."

Storage vendors had better hope they can come up with a complete product for SANs. According to market researcher International Data Corp. in Framingham, Mass., the storage market will tally $34.3 billion in revenue this year, with the majority of sales coming from SAN-ready systems. But vendors will have to solve glaring problems — including serverless backup, secure-access control and interoperability — to meet customers' needs.

"Companies aren't eveo bothering with SANs," but they need some kind of operation that can store data and doesn't require any dowotime, said Steve Duplessie, an analyst at Milford, Mass.-based Enterprise Storage Group Inc. "Most companies do backups in case someooe does something stupid," Duplessie said.

SANs would mitigate the amount of downtime required to back up data, but secure-access control is holding back the storage market's hottest trend. According to Duplessie, secure-access control prevents one node from viewing and accessing storage resources allocated to a different node in a shared storage environment. But there's no management standard to limit a server's operating system to a defined part of the SAN, analysts said.

For example, Windows NT and Solaris servers view any storage space they see in a SAN as entirely theirs and end up overriding eacb other's information. By oext year, Duplessie said, companies will roll out reliable secure-access products, allowing servers to recognize the space allotted to them.

**SAN Market Projection**

*Sales for worldwide disk systems and storage-area networks:*

| | DISK SYSTEMS | SAN |
|---|---|---|
| 1999 | $29.9B | $3.4B |
| 2000* | $34.3B | $4.5B |
| 2001* | $38.4B | $6.7B |
| 2002* | $42.4B | $9.7B |

*Estimated data

SOURCE: INTERNATIONAL DATA CORP. 5 1999 WORLDWIDE DISK SYSTEMS MARKET FORECAST AND REVIEW

## Serverless Backups

Analysts also said serverless backups will be a key component of SANs' success. Currently, the server manages the backup from disks to a tape drive.

When serverless backup arrives, it will be the "killer app" for SANs, Duplessie said. It will allow data to be stored from the disk to tape devices over a Fibre Channel ring without bogging down the server, he said.

A big vendor needs to drive a SAN standard, and no one has stepped forward to date, Duplessie said. He predicts a company that's not involved io storage management, such as Cisco Systems Inc., will create a standard. This move would allow a company to add to its capital and move into promising areas not dominated by anyone, he added. ◗

## Outsourcing to Impact the Storage Market

SAN won't be the only trend happening this year in storage.

Enterprise Storage Group Inc. analyst Steve Duplessie predicts more companies will be outsourcing their storage this year. The firm forecasts companies will spend 60% of their capital on information technology costs for storage experts, products and services.

Availability is critical, and companies lack the infrastructures and experts to manage storage, Duplessie said. It will be easier for firms to "find a company that lives and knows storage management, and let them worry about it, he said."

As for firms leading the outsourcing charge, StorageNetworks Inc. in Waltham, Mass., tops the list, followed by Exodus Communications Inc. in Santa Clara, Calif., and Level 3 Communications Inc. in Broomfield, Colo.

But not everybody is convinced about outsourcing.

BankBoston's Hemant Kurande said outsourcing will catch on for enterprise storage management, but it still has drawbacks.

"I need to look at the cost model and see a real justification and tangible needs for outsourcing," said Kurande, senior manager of treasury infrastructure at the Boston-based bank. "It's a difficult pill to swallow – the information is intellectual property of every corporation and to keep it elsewhere is difficult to comprehend."

What won't be difficult to comprehend is the intensified competition this year, John McArthur, an analyst at International Data Corp., said companies will battle to roll out "credible" products and shift from high-end to midrange products.

Hopkinton, Mass.-based EMC Corp. will continue to lead the storage market but will be challenged to integrate Clarion products, he said. IBM and Compaq Computer Corp. will be heavy players, while smaller firms such as Carlsbad, Calif.-based Dot Hill Systems Corp. and Tinton Falls, N.J.-based ECCS Inc. will need to specialize in certain storage facets to survive, McArthur added.

– *Kathleen Ohlson*

# E.piphany Adds E-Mail Tools

*Marketing apps to be added to E.4*

BY LEE COPELAND

E.piphany Inc. this week will update its E.4 System data analysis application with e-mail marketing tools, a welcome utility for corporations looking to use e-mail to market their products and services.

The San Mateo, Calif.-based company will annouoce that it has added E.mailer to E.piphany E.4 System this week. E.4 System includes tools for identifying and analyzing customer segments and creating customer preference profiles. With E.mailer, E.piphany customers can develop e-mail marketing campaigns based on data extracted through the E.4 analysis process.

Messages created with E.mailer can include historical and transactional data targeted at specific customers. For example, a cellular phone company might alert high-volume callers of pricing plans that fit their usage profiles.

Dennis Yu, marketiog manager at AMR Corp. in Fort Worth, Texas, said his company purchased E.phipany E.4 because of its ease of use, integration with disparate data sources and detailed analysis capabilities.

"It's a three-legged stool," Yu said. "If you took ooe of tbe legs away, you couldn't sit on the thing. Even if a product has all the functionality in the world, if it wasn't easy to use, no one would use it."

AMR subsidiary American Airlines plans to use E.4 to analyze data extracted from its customer loyalty database, BroadVisioo Inc. applications and other data stores. American Airlines uses e-mail for some programs and would like to update its campaigns with more targeted offers but is undecided on how best to expand its e-mail-based marketing campaigns.

"You have to be very careful oot to burn the e-mail channel," said Yu. "Customers are very sensitive, because a lot of small outlets are taking advantage and abusing the e-mail because of its low cost."

E.mailer includes an opt-out feature that allows recipients to request to be removed from mailing lists. E.piphany competes with vendors such as Broadbase Software Inc. in Menlo Park, Calif., and Annuncio Software Inc. in Mountain View, Calif. ◗

JUST THE FACTS

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# Lotus Introduces New CEO

## *IBM veteran says he will preserve innovation*

AT LOTUSPHERE 2000 in Orlando last week, Lotus Development Corp. introduced new CEO **Al Zollar** to customers, partners, analysts and the press. The 23-year IBM veteran will take over for outgoing CEO Jeff Papows Feb. 1. *Computerworld* senior editor Lee Copeland spoke with Zollar about his strategic vision for the groupware vendor.

**Q: What skills are you bringing to Lotus that will help move the company forward?**
**A:** I've had a lot of experience in software. And that experience has gone across many technology areas: databases, application development, systems management, Java. And I think those experiences in software — plus the experiences I've gained in developing strategies, sales and services, and in other aspects of what it takes to be a successful software business — will serve me well. Another thing that I hope will serve me well is that I have always been a believer ... in diversity of thought. It opens new ideas and new approaches, and that type of innovation has been a hallmark of Lotus.

**Q: You have been described as a true techie. Is that an accurate moniker?**
**A:** I would describe myself as an OK engineer. Not a superb engineer, not a great engineer, but someone who appreciates what technology can do and how people use it. But it's been a long time since I've done any type of engineering. Most of my time has been focused on building software businesses and looking at business models and acquisitions and relationships that are important to building a successful software business.

**Q: Departing CEO Jeff Papows has been criticized for not having enough of a handle on development. Notes/Domino 5.0 shipped almost two years late. Will one of your priorities be to get on top of development?**
**A:** Software engineering is quite complex. And Lotus is not the only team that could be described as having problems from time to time meeting execution milestones. That being said, I have every confidence in the team that we currently have and their ability to execute with time, precision and customer focus.

**CEO AL ZOLLAR says his software background should help Lotus move ahead**

I think at the end of the day, it's hard to move dates out, but it's usually based on a deep concern on what the customer experience with the product will be.

**Q: As IBM and Lotus meld more, what will be the role of Iris, the development group inside Lotus? Will it go away?**
**A:** Absolutely not. Iris is the heart and soul of Lotus and the heart and soul of innovation that makes Lotus what it is. I want to know how I [can] help them to continually improve that team and innovate as they always have.

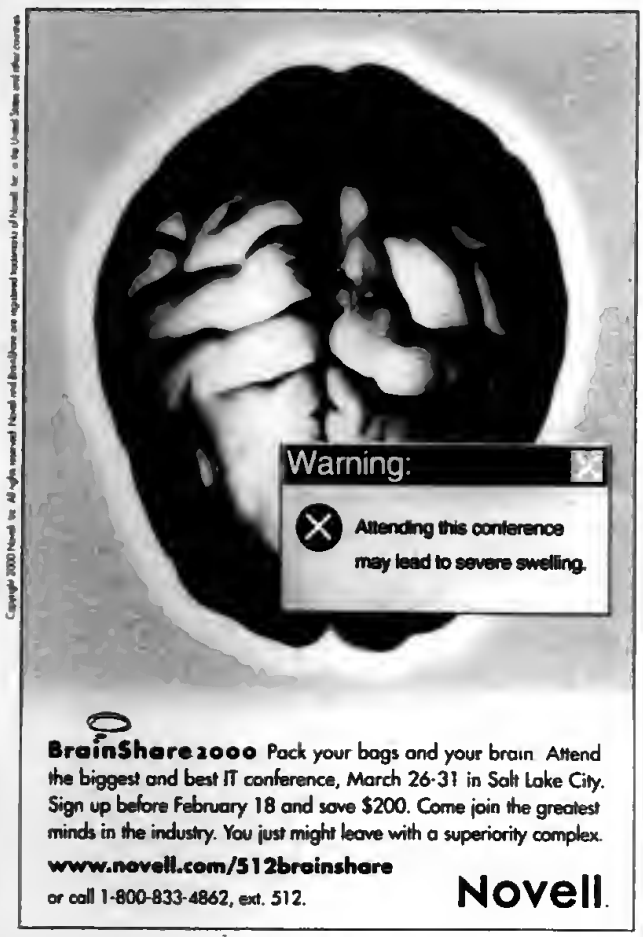
**Q: What needs to happen next technologically to get the Raven knowledge management suite off the ground?**
**A:** I think it's a matter of execution. The real point of Raven is the value of being able to know what you know through the discovery capability that Raven brings. Then [the next step is] to put that information in the hands of those who need it, when they need it — the expertise-location capability.

Then, finally, the capability of establishing a portal that knowledge can be accessed from.

**Q: While Raven is cooking, what is Lotus going to do to help get collaboration and e-mail migrations off the ground? A lot of customers are still in the Notes 4.0 world, and some haven't yet started creating collaborative applications with Domino.**
**A:** I've heard some of those things. Once I become more of an authority, we'll see if a course correction is required. Domino as a development platform is very successful, but I need more insight to give a better answer.

**Q: You're an African-American, and there are very few blacks in the technology or business worlds at your level. What do you make of it?**
**A:** As people build a skill set and portfolio of experience that represents a set of talents that they bring to the job, that becomes the deciding factor in why they are selected. I would like to believe that that is why [IBM Senior Vice President] John Thompson selected me for this position.

The fact that I happen to be African-American is a positive sign, relative to demonstrating a commitment to diversity. But I hope it's the talent of individuals that are allowed to shine without any blockage or barriers that are artificial. ◗




# First Cybersquatting Case Settled

BY MARY LISBETH D'AMICO

The World Intellectual Property Organization (WIPO) has settled its first case of cybersquatting, the practice of registering for an Internet domain name with the intention of profiting from the resale of the name.

WIPO said Scott Donahey, the panelist it appointed to decide the case, is requiring that Michael Bosman, a California resident, transfer a domain name to U.S.-based World Wrestling Federation Entertainment Inc. (WWF).

In October, Bosman registered worldwrestlingfederation.com with Melbourne IT, a domain name registrar in Australia. Three days later, he tried to sell the name to the WWF at a profit, asking for $1,000, according to a report on WIPO's Arbitration and Mediation Center Web site.

WIPO, a United Nations agency, began implementing procedures for settling domain name disputes in December. The organization identifies cases of "clear abuse" of a trademark holder's rights that it anticipates can be settled within 45 days. It then appoints an independent panelist to decide the case.

Donahey judged Bosman's transaction to have been made in bad faith. The domain name he registered is identical or confusingly similar to the trademark and service mark of the WWF, and the respondent has no rights or legitimate interests in the name, Donahey said.

The two disputing parties are settling the question themselves, WIPO said. The appointed panelist normally wouldn't issue a decision in such a case, but the two parties apparently didn't inform the panelist of their agreement, said Erik Wilbers, a senior counselor at the Arbitration and Mediation Center. ◗

*D'Amico writes for the IDG News Service.*

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## BRIEFS

### Cisco Buys VPN Firms

Cisco Systems Inc. in San Jose last week said it would buy Altiga Networks Inc. in Franklin, Mass., and Compatible Systems Corp. in Boulder, Colo., for $567 million in stock. Both companies make virtual private network products.

### Oberon Sold for $181M

Oberon Software Inc. in Cambridge, Mass., last week said it's being acquired by OnDisplay Inc., a San Ramon, Calif., software vendor that supports online marketplaces. The stock deal is worth $181 million at current prices and is expected to be completed in March.

### Rambus Sues Hitachi

High-speed memory maker Rambus Inc. in Mountain View, Calif., last week filed a lawsuit in U.S. district court accusing Hitachi Ltd. in Tokyo of infringing on patented technology in some of its key semiconductor products. The suit, filed in U.S. Federal District Court in Delaware, seeks to bar Hitachi from manufacturing, selling or importing semiconductor products.

### GTE CyberTrust Acquired for $150M

Dublin-based electronic security firm Baltimore Technologies PLC plans to acquire Needham, Mass.-based GTE CyberTrust Solutions Inc. for $150 million. The acquisition is expected to increase Baltimore's market share in electronic-business and e-commerce security, especially in the public-key infrastructure arena, the company said.

### Data Analysis Tool Maker Goes for $126M

Net Perceptions Inc. in Minneapolis last week said it had agreed to buy Knowledge Discovery One Inc., an Austin, Texas-based data-analysis tool maker for online and multichannel retailers. The stock-swap pact is worth about $126.4 million. Net Perceptions makes real-time personalization products, including technology that can recommend consumer purchases.

# Compuware, Viasoft Call Off Their Merger

*Mainframe services vendors decide antitrust action would cost too much*

BY JAIKUMAR VIJAYAN

COMPUWARE Corp. and Viasoft Inc. last week terminated their proposed merger.

The move resulted from continuing uncertainty and litigation costs arising from a U.S. Department of Justice civil suit seeking to block the merger on antitrust grounds, according to statements from both companies.

Compuware, a $1.6 billion mainframe vendor in Farmington Hills, Mich., announced its bid to buy Viasoft, a $104 million rival in Phoenix, last July.

"I'm not surprised at all," said David Floyer, an analyst at IT Centrix, a consultancy in Boston. In addition to the government pressure, "I think there was enormous user pressure [against the merger] as well," Floyer said. Users are becoming very sensitive to moves that could lead to monopoly situations, he said.

The DOJ's antitrust division sued to block the purchase in October, claiming that the proposed $167 million merger would result in higher prices for testing and debugging tools used in mainframe software development, monitoring and failure management.

"The board of directors did not believe that continuing the litigation, with its inherent risks, substantial costs and potential irreparable damage to our business and relationships with customers, distributors and employees, was in the best interests of Viasoft shareholders," said Steven D. Whiteman, chairman, president and CEO of Viasoft, in a press release announcing the move.

# IBM Sets Up $500M Fund For Internet Start-ups

*System vendors use venture capital*

BY JAIKUMAR VIJAYAN

The $500 million fund set up by IBM this month to finance Internet ventures builds on the company's campaign to push hardware, software and services to Internet start-ups.

IBM's Global Financing Group also announced that it will work with venture capital firms to finance the purchase of IBM technologies and services for Internet start-ups that have already completed their first round of venture capital funding.

The move builds on IBM's announcement of less than a month ago that it will finance e-commerce projects by clients of Ernst & Young LLP in New York. At that time, IBM executives said Ernst & Young customers were expected to use nearly $500 million in IBM funding.

Programs like these are "almost like the price of entry into the Internet market these days," said Laurie McCabe, an analyst at Summit Strategies Inc. in Boston. With companies looking to invest in Internet start-ups, it's important for system vendors to have funding programs, McCabe said. "It's a way to have a pulse on the venture capital community, and it is also a way to ensure that your technologies and services have mind share" among the start-ups, she said.

IBM has earmarked more than $1 billion in funding programs for Internet companies. Its programs include the funding of venture capital firms specializing in Internet companies, acquisitions of start-ups, deferred payment programs and rent-to-own offerings.

IBM is hardly alone. Other system vendors — most notably Hewlett-Packard Co., with a $1 billion fund, and Sun Microsystems Inc. — have similar programs in place.

Similarly, Chicago-based Andersen Consulting last December said it's forming a venture capital firm, called Andersen Consulting Ventures, that will invest $1 billion over the next five years in e-commerce businesses. Another integrator, Cambridge Technology Partners, also announced plans last month to set up a fund to help dot-com start-ups.

# SAP Execs to Get Options

*Shareholders seek to halt U.S. brain drain*

BY CRAIG STEDMAN

In an attempt to stop a management brain drain at the U.S. subsidiary of SAP AG, the German software vendor's shareholders last week approved a plan to start offering stock options to senior executives and other "top performers."

The lack of a stock-option program has caused SAP fits since early last year, when executives at SAP America Inc. in Newtown Square, Pa., began leaving in droves to join U.S.-based vendors that could offer lucrative stock incentives.

For example, Siebel Systems Inc. in San Mateo, Calif., has hired more than 25 high-level employees away from SAP America. That prompted a frustrated SAP to file a lawsuit charging Siebel with predatory hiring practices last fall.

European companies typically eschew American-style stock-option plans because of fears among shareholders that their ownership stakes will be diluted as employees exercise the options they get. As recently as November, SAP co-CEO Hasso Plattner said at a press conference that European shareholders "wouldn't stand for that kind of dilution."

But SAP said more than 99% of the shareholders who voted at a special meeting in Germany last week approved the new plan, which is scheduled to take effect later this quarter.

The plan lets SAP issue either stock options or convertible bonds to employees. A total of up to 6.25 million shares of SAP's stock, amounting to about 6% of its outstanding shares, can be offered under the new program.

## SNAPSHOT

### Quarterly Earnings Roundup

*Earnings announced last week (period ended 12/31/99)*

| COMPANY | REVENUE | | NET INCOME (LOSS) | |
|---|---|---|---|---|
| | 1999 | 1998 | 1999 | 1998 |
| Advanced Micro Devices Inc. | $968.7M | $788.8M | $85M | $22.3M |
| America Online Inc. | $1.6B | $1.1B | $271M | $115M |
| Corel Corp.* | $60.9M | $67.2M | $4.0M | $6.0M |
| IBM | $24.2B | $25.1B | $1.16B | $1.27B |
| Legato Systems Inc. | $71.2M | $48.5 | $3.05M | $7.06M |
| Microsoft Corp. | $6.1B | $5.2B | $2.4B | $1.97B |
| Sybase Inc. | $237M | $232.5M | $26M | ($15M) |
| Symantec Corp. | $201M | $156M | $89M | $15M |

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MARYFRAN JOHNSON

# Blair Witch chip

CLOAKED IN THE SAME MEDIA-SAVVY SECRECY that kept teen-agers enthralled by last summer's hit movie *The Blair Witch Project*, an innovative chip for mobile computing made its surprisingly splashy debut last week. Why surprising? Try to name the last time a microprocessor introduction made it to CNN Headline News or caught anything like the media wave that surged around Transmeta Corp.'s Crusoe chips.

MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at maryfran_johnson@computerworld.com.

Radio stations up and down the West Coast were calling *Computerworld* two days before the mysterious chip's Jan. 19 launch, wanting to know what we knew about it. What did those hidden messages on Transmeta's Web site mean? Was this really going to be (dramatic pause) The Intel Killer? Well, with a 82% share of the $22 billion microprocessor industry, reports of Intel's imminent demise are probably a trifle premature.

What enhanced Transmeta's media buzz was its carefully crafted reputation for secrecy, which fueled interest and speculation among Silicon Valley tech-watchers. What Transmeta finally had to show for itself after five years of effort was a technically intriguing, software-driven approach to chip design that makes Crusoe processors tiny but powerful, and extremely lightweight in power consumption. That makes them prime candidates for the incoming flood of handheld and mobile devices.

But why should corporate IT managers make a mental bookmark of a chip unveiling? Sure, Crusoe runs Intel apps, but more important, mobile devices (not laptops) will outnumber PC desktops in your company by at least 3-to-1 in just a few years. What looks like a niche market today is really a vast unclaimed frontier, with the Intel challengers emerging now to stake it out.

The inexorable rise of ubiquitous computing means your users will travel farther afield with greater access to corporate data than ever before. These mobile and wireless gadgets are already creating new ways of doing business, and that trend will escalate rapidly. Start thinking now about how to integrate these 21st-century technologies with your existing infrastructure of PCs, servers and networks. Don't end up lost in the woods as the next Blair Witch phenomenon arrives. ◗

DAN GILLMOR

# Corporate IT: Take the lead against privacy intrusions

SUPPOSE THAT ON A VISIT to a shopping mall, someone followed you with a video camera, capturing your every move — which store windows you looked into, which products you examined and what you bought. You'd probably call the cops.

Why, then, is your company probably conducting a similar kind of surveillance of visitors to your Web site?

The emerging Digital Age is putting consumers on a collision course with corporate America — particularly dot-coms — over privacy. Big Brother government is sinister enough. But the myriad "Little Brothers" — commercial sooops that collect and trade people's most personal information — may turn out to be even more creepy, and dangerous.

DAN GILLMOR is technology columnist at the *San Jose Mercury News*. Contact him at dgillmor@sjmercury.com.

Hardly a week goes by without an example of yet another invasion of privacy by an Internet company or the revelatioo of yet another egregious security flaw in PC software and e-commerce databases. Although the marketplace is spurring the development of privacy-enhancing software and other tools, self-regulation — industry's favored solution — is plainly oot working.

Consumers have brought some of this intrusion on themselves. Americans claim they want to protect their personal data, but then they casually give it up to marketers. They also insist that information on the Web be free. So Web sites inevitably try to make money on the only things left to them: advertising and trading on customer data collected by monitoring cybersurfers' "click streams."

The collectioo and reselling of consumer data predates the Web. But where it once took skill and serious money to pull together profiles of individuals, the Net has made the process much simpler and cheaper.

Privacy abusers excuse their activities by saying they're providing a service: customized marketing that helps consumers find the products they want. Yet the marketers rarely ask people first — a process known as "opt-in" — if they want to be pitched this way. And they oever tell the individual customer about the inherent privacy issues.

Many Web sites have privacy policies. But violations of those policies go unpunished. And or-

ganizations set up to monitor policies haven't shown any particular enforcement backbone, possibly because they're funded by the companies they monitor.

Indeed, the market will solve some of the worst abuses. The online equivalent of word of mouth — "word of mouse" — is much stronger than the real-world version, so companies that routinely violate privacy will become pariahs.

But the more subtle, pervasive manipulations will continue until they explode into public consciousness. That will lead to a call for government intervention that will be deafening and irresistible.

What all this means for IT organizations is that they should build privacy protections into their companies' systems from the start of projects, not bolt them on as an afterthought.

DAVID MOSCHELLA

# Broadband isn't the linchpin for AOL/Time Warner

**LET'S START WITH the easy part. Contrary to much of what you've probably heard, the proposed merger between America Online and Time Warner isn't about broadband services, or at least it had better not be. The way I figure it, there's only about a 1 in 6 chance that Time Warner's broadband cable TV assets could do AOL much long-term good.**

DAVID MOSCHELLA is an author, independent consultant and monthly columnist for *Computerworld*. Contact him at [redacted]

Consider that, for consumers, there are three main high-bandwidth alternatives: telephone DSL-based systems, cable TV networks and, eventually, wireless transmission. But within the cable segment, there are two additional scenarios: Cable networks will either be open to multiple service providers, or they'll be dominated by owners such as AT&T or Time Warner. Only a belief in the latter scenario would give AOL a real incentive to merge with Time Warner, and even then, the combined company would reach only about 20% of U.S. households with cable TV. So the telecommunications part of this story simply isn't compelling.

This tells me that content and distribution strategies are driving the deal. More specifically, the logic of the merger seems predicated upon one of two possible assumptions: Either AOL's Internet savvy will be sufficient to adapt Time Warner's content to the Web more successfully than would otherwise be the case, or AOL's immense Internet presence will provide Time Warner's content with an important competitive edge.

Of these, the former seems particularly dubious. AOL isn't really a content producer, let alone an expert in migrating from old to new media. It's hard to believe that AOL's management team will suddenly figure out how to make *Time* magazine, CNN and HBO catch fire on the Web. Indeed, after listening to numerous interviews with Steve Case and Gerald Levin, I could only conclude that their sense of what services consumers will actually want is no clearer than yours or mine.

Consequently, it seems to me that — other than making a lot of insiders even more rich and even more self-important — this largest of all media mergers is based almost entirely upon the view that the synergy between Time Warner's content and AOL's distribution will strengthen both companies' competitive positions. It's a result of the familiar faith in the power of vertical integration and economies of scale.

Historically, of course, there has been ample evidence to support this position. Radio and TV broadcasters once dominated radio and TV programming, just as moviemakers once controlled many movie theaters — until the federal government stopped them. Who knows what content AT&T would have run along its wires if the government hadn't intervened there also. Clearly, during the 20th century, the bundling of content and distribution was often effective, with distribution emerging as a major source of media market power.

But I expect that the 21st century will prove different. Distribution should shift from a scarce resource to a surplus resource, making vendor monopolies the exception, not the rule. Additionally, even though the transmission of telephone, television and Internet signals will eventually converge, the content that runs on top of this platform will increasingly evolve into a distinct and independent industry.

Thus, although these two great companies present many interesting possibilities, their merger seems based more on the distribution-dependent patterns of the past than on the audience-driven models of the future. As we all know, the history of IT industry mergers and acquisitions hasn't been pretty. Unfortunately, AOL/Time Warner seems destined to be yet another example of how 1 + 1 winds up equaling 1 1/2.

# READERS' LETTERS

## The cost of Y2K

I HAVE very much appreciated your excellent coverage of Y2K issues. Now that 2000 has arrived and apparently been survived, I have one nagging question.

Saving file space by omitting the century digits was a deliberate design decision back when the cost of storage was very high. I wrote systems in the early '70s where we had to total the disk-space cost of every byte. And in date-heavy files with millions of records, this cost was considerable. Disks were low-capacity and expensive, so saving a couple of million dollars by shortening dates was easy.

Has anyone calculated the total savings since these economy measures were first taken? In today's dollars and assuming that money not spent on disk space earned average compounded returns elsewhere, the total after 40 to 50 years should be spectacular. Despite the enormous cost to add century digits or alter logic, I suspect that the return on investment of the "century-omission feature" was positive. Perhaps someone at *Computerworld* could take a crack at calculating this.

**Todd Caughey**
Woodbury, Minn.

KEVIN FOGARTY'S Jan. 1 *Computerworld Online* article ["Congratulations on a Boring Y2K"] is accurate, honest and poignant. The IT professionals who remedied the issue and did indeed keep "the world away from the brink" awaited the new century hoping that their colleagues worldwide had done their jobs to the best of their abilities. An undetected error in a critical application would have had dire results, and all IT professionals knew it.

We were successful.

To the critics, I say that the cost of failure would have been many times greater than the cost of the efforts. I would like to express my appreciation to my colleagues in the countries that were thought to be problematic and where IT professionals make $200 per month, not per day.

**John R. Felhofer**
Senior computer operations manager
J. J. Keller & Associates
Neenah, Wis.

## A pat on the back

I JUST RENEWED my subscription to *Computerworld* and want to let you know that I regard it as the best in the business and among the best anywhere. I especially appreciate the writers' unbiased and comprehensive coverage of both the good and the bad of the business. Also, you give more and better coverage of my favorite topic, project management, than other technology publications. Finally, I read most other publications because I hope to learn something. I look forward to *Computerworld* because your talent for bringing some of the absurdities of business to light clarifies the risks and problems that will be encountered and occasionally makes me laugh.

Thanks to all your writers and editors.

**Steve Mueller**
Staff engineer
Honeywell Inc.
Belton, Mo.

*More letters, page 32*

**COMPUTERWORLD** welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. Include an address and phone number for immediate verification. Internet: letters@computerworld.com.

SUSAN SCRUPSKI—MIRANDA

# Look before you leap at e-business consultants

**WHEN IT COMES TO soliciting help with the e-transformation of your traditional business, don't press the panic button. Keep your wits about you. Think long and hard about who's qualified to help you retool and redeploy. Never before in the history of technology has the fear, uncertainty** and doubt (FUD) factor played such an acute role in the making of snap decisions on technology overhauls.

The trouble with the Internet is that it has generated an unprecedented global advice factory that feeds off an upswelling of panic and insecurity. Established multinationals that view the Internet like the corporate sequel to *The Andromeda Strain* are willing to take guidance from just about anybody who's convincing. It's not the fittest, it's the fastest talkers and sharpest salesmen who are making inroads with young dot-com hopefuls and e-commerce executives at traditional companies that have numbers to meet every 90 days.

SUSAN SCRUPSKI-MIRANDA is president of IT Services Advisory LLC in Hillside, N.J. Contact her at [redacted] ITServicesAdvisory.com.

In his craving for quick advice, a CEO is as likely to turn to his ad agencies as his management consultant, or yield to his IT vendors or — worse — an investment banker touting some hot Internet professional services IPO that claims to have all the answers.

The trouble with this panicky scramble for advice is the life-threatening risk involved in making these decisions and the faith CEOs are putting in these Internet experts. Most knowledgeable folks would agree the experts in Internet strategy haven't yet emerged. It's too new for everyone.

The media have served up an image of the Internet as the Wild, Wild West, where new-economy 49ers pan for gold and intrepid trailblazers chart new territory. But I think these metaphors aren't accurate to describe life on the Internet gravy train.

The Wild, Wild West was dangerous, dirty and unforgiving. It was filled with murderers and thieves, wild animals, harsh terrain and native inhabitants who fought long and hard to keep their homeland. Getting around was difficult. Eating three square meals was difficult. Survivors, albeit a scruffy lot, endured considerable hardship to prevail. Except for the killer instincts of some Web entrepreneurs, this hardly describes today's Internet frontier.

Givers of Internet advice have it easy. Their lives resemble the Garden of Eden, where everything is beautiful, safe and plentiful. Where's the fear and adversity when scary conversations take place in plush resorts and rough neighborhoods have microbreweries? A guru's life in the Garden of Internet Eden is worry-free. He has little accountability for his advice. After all, he's feeding off people who are a bit delirious from their staggering market caps and media wet kisses and who can get away with business plans that say, "We may never make a profit."

Ahem. This is business fantasy, a paradise — not the OK Corral. Peddling heretical advice and challenging executives to take gargantuan risks is easy when you have nothing to lose.

So before you get swept away by the fear whipped up by the new Internet apostles, collect your thoughts. Resist the urge to yield to the mind-altering power of FUD. At the end of the day, these are simply IT services firms and consultants. The discipline you've applied to choosing help from these firms in the past is applicable in today's Internet economy. ◗

WILLIAM ULRICH

# We still haven't reached the final chapter of Y2K

**MANY PEOPLE BELIEVE the Y2K storm passed with few glitches. This has caused people from all walks of life to think the problem was overblown. Others, specifically those charged with fixing Y2K and paying for** those fixes, believe we beat the bug into submission. While the media are playing out these two theories, it's too soon to say if either is correct. Y2K is too insidious a problem for us to have a complete picture now.

WILLIAM M. ULRICH is a management consultant and president of Tactical Strategy Group Inc. Contact him at [redacted] or through [redacted].

First, remember that since Jan. 1, we've seen numerous Y2K problems emerge. Systems failed at nuclear power plants in Japan, Spain, the U.S. and elsewhere. Failed credit-card software rebilled accounts on a daily basis for a single charge. The Federal Reserve Bank of Chicago reported problems in transferring $700,000 in tax payments from customers of 60 financial institutions. The FDA reported 24 medical device failures. Heating systems went out in schools, and food stamp deliveries and Medicare payments were late. The Defense Department lost track of a spy satellite, prison terms were miscalculated in Italy, e-mail systems shut down and ATM machines failed.

But the problems reported were far fewer than even the optimists anticipated. Energy, air-traffic control, water, heat, banking, medicine, transportation, government payment systems and a host of other areas have been finding and fixing glitches since the rollover. But to my knowledge, no one has died because of a Y2K problem, and global infrastructures are holding steady.

None of this is a total shock when we remember the original concerns that rallied the IT community around the year 2000 problem during the early 1990s. Before folks with little knowledge of computer systems began heating their chests about the end of civilization, Y2K was a systemic problem with the potential to ripple across systems and environments. Over the past few years, this original assessment of Y2K's impact was lost in people's concerns over our survival.

Y2K-related challenges to the human race quietly passed into the night during the rollover weekend. This leaves us with the mundane reality of applications, networks, non-IT systems and spreadsheets continuing to test year 2000 compliance for years to come. In the second book we co-authored, *The Year 2000 Software Crisis: The Continuing Challenge* (Prentice Hall, 1998), Ian Hayes and I compared Y2K to an old Chinese proverb called "death by a thousand tiny cuts."

These tiny cuts stem from miscalculations and the triggering of errant logic that contaminate data and force bad decisions. Post-rollover problems, driven by cycle dates or an odd set of conditions, may end up in related systems. Derivative errors can then result from bad data being used by internal and external systems that inherit that data. Some problems will be caught immediately, and others will be discovered down the road, or maybe never. All this can cause myriad problems, especially with inventory, distribution, tracking and financial systems.

With the threat of Armageddon stripped away, we're left with a relatively boring story. Don't get me wrong: Some embedded systems can loop for a while and fail later. Others may fail on leap day or at year's end. All this may provide some temporary media excitement, but it's unlikely to be any worse than the Jan. 1 rollover.

Remember that several hundred problems have been filtering into media reports since the rollover. Now consider that for every problem reported, there are likely hundreds that went unreported. That's still low, but consider that for every few problems we catch, a few more errors may go undetected. That's what we should worry about.

The reality of the Y2K bug sneaks up on companies and doesn't explode in the course of a single evening. It's complex, hard to identify and fairly run-of-the-mill. Time will tell if these problems get an honorable mention in the Y2K media frenzy or avoid the spotlight. In the meantime, let's keep our eyes and minds open as we move through the year. ◗

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# READERS' LETTERS

## Questions of jurisdiction surround Internet tax debate

IN HIS Dec. 13 column, "Internet Tax Moratorium Is Basically Unfair," Dan Gillmor didn't frame the opposition position fairly.

For those who shop locally, the sales tax is a privilege levy on supporting the infrastructure of daily living, of having personalized service, a physical presence when things go wrong and, in general, a source of comfort from the fear of the unknown.

The real question is, as an Internet merchant outside of your jurisdiction, why do I owe your locality anything if I do not receive any tangible benefit from your authority?

**Stephen Richard Levine**
CEO
Franzel Systems
Los Angeles

THOSE WHO SAY Internet business isn't taxed are mistaken. What's confusing is that it isn't currently taxed *extra* because it's Internet business.

Retail purchasers on the Internet are required to pay sales (or use) tax just as they are if they buy from a catalog by phone or mail. Companies selling on the Internet are required to pay income taxes just as they would with any other sales medium. Let's keep this in mind when discussing Internet taxation.

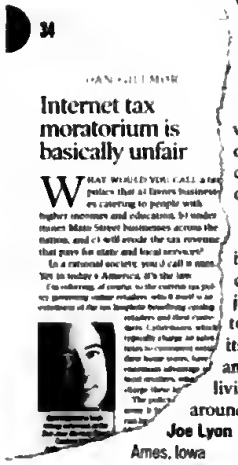
**Bill Patterson**
Principal consultant
Stratford Technologies Inc.
Somerdale, N.J.
patterson@computer.org

QUESTIONS concerning sales-tax jurisdiction are the equivalent of the first rays of dawn, which precede the full burst of sunrise — which in this allegory would pertain to the full realization of the essence of the Internet itself, being global.

Therein lies the beginning of the end for any type of local, regional, statewide or even national jurisdiction in the guise of sovereignty.

Like the vast majority of political quarrels, this one is very shortsighted. How silly is it for any local political jurisdiction to "demand its due" from an individual living halfway around the globe?

**Joe Lyon**
Ames, Iowa




## Open-source methodology best bet for IT security

REGARDING the Dec. 20 Page One article "Feds Seek IT Help on Net Security": Out of what cave did these businesses come? It has been proved that open-source methodology for security is best. Both the PGP and RSA security standards have been exposed to many eyes and have had the flaws worked out of them. With Linux, every time there has been a flaw, the whole community has worked to seal the leak.

Having the government form a group with IT will only help. Exposing all the holes in a given system and publishing those holes for the IT world to see is the only way to fix them.

Just as in home security, you want to use proven technology that many have used so that you know where the holes are and can fix them or at least be aware of them.

**Bill Ackerman**
Software developer
Bolingbrook, Ill.
aack@mediaone.net

## Strassmann's post-Y2K column rings true

PAUL A. Strassmann, in his Jan. 1 *Computerworld Online* column, "No Reason for Euphoria," articulated the entire Y2K event and its consequences for the future with perfection. It was refreshing reading, particularly after three or four columns by IT professionals (on the same site) who couldn't pat themselves on the back quite furiously and frequently enough.

Outstanding!

**Jeremy Steele**
Columbus, Ind.

I AGREE with just about everything Paul A. Strassmann said in his Jan. 1 column, within context. However, there is enough blame to go around.

IT is always taking a hit for being bad at communications, but it can't be denied that for at least 20 years in most American corporations, IT personnel presented the facts to intelligent business management personnel perfectly capable of understanding the problem. They chose to ignore them due to pet projects and the bottom line.

The last time I checked, risk management typically reports directly to the CEO. Responsibility for ignoring the problem lies in the boardroom. Until IT is given a serious place at the table, it cannot be held accountable for bad business decisions and the shortsighted practices of the typical American corporation.

**Dennis Monce**
Database administrator
Arizona State University
Tempe, Ariz.

## Windowing patent absurd

I AM A RETIRED programmer/systems designer with more than 40 years' experience. In 1980, I had to overhaul an entire system written 10 years previously by a consulting company that used single-digit years.

The technique I used was windowing. If a year ended in 7, 8 or 9, it was 197x, otherwise it was 198x. This let the programs operate for the next seven years or so, and they were replaced by that time.

The technique of windowing has been around for a long while, and the patent office and the clown who received the windowing patent are patently absurd ["Government to Review Y2K-Fix Patent," *Computerworld Online*, Dec. 23]. Shame on them. What greediness!

**Richard Hartmann**
Retired project leader
Manchester, Tenn.
rhartmann@cales.net

AFTER READING Steve Alexander's Business QuickStudy article about intellectual property [Jan. 3], I am mystified by any attempt to claim that date windowing is some sort of magnificent discovery worthy of a patent.

The question is asked in the article, "Would someone in the cutting edge of the relevant art think it was obvious?" Any first-year programming student would come up with this solution if presented with the Y2K problem. The solution's distance from "cutting edge" is infinite.

People who gathered around the Y2K work with an eye toward lawsuits and collecting fees for ideas represent an element of our society that serves no productive purpose. As the old saying goes, they are part of the problem, not part of the solution.

**John Herrold**
Boston

## Efforts of antiporn group deserve more coverage

THE JAN. 3 issue of *Computerworld* contained an article, "Hackers Join New Anti-Child Porn Group," that I feel deserved more than a short paragraph under the category of Briefs. There's irony in hackers and network security experts working together for a common cause, but what a cause — to hopefully eliminate some of the sick sites that plague our society.

I hope that *Computerworld* continues to monitor and publish their progress and that corporate America gives whatever support it can. Let's give credit where it's due; applaud these individuals for their efforts!

**Alene E. Louis**
Covington, Ky.

**Editor's note:** *We agreed that Condemned.org deserved a full-length article, and we produced one as soon as we could ["Vigilante Group Targets Child Pornography Sites," Business, Jan. 17].*

WHILE, FOR the most part, I agree with these folks in being against child porn, I feel that they cannot justify the malicious hacking of those sites.

The logic of saying that the hacking is an electronic form of using pepper spray doesn't hold up. A woman attacked on the street didn't go out looking for someone to attack her. Similarly, the porn sites did not go into their domain and attack.

I don't agree with the porn, but I don't condone the vigilante methods either.

**Edward Hudgeons**
Handywerks
Albuquerque, N.M.
handyheh@ix.netcom.com

## Still no progress in Indian integration

AT AN EQUAL Employment Opportunity meeting in the '70s, our guest speaker was from the Bureau of Indian Affairs. After hearing him talk, I asked him, "Let me get this straight: You have no incentive to bootstrap the Indians into the 20th century?" He sputtered a reply that it was a tribe's choice to get off the dole.

I was incensed that after 100 years there was no progress and that the BIA was an anachronistic agency that should have been legislated out of existence years ago. There is no sense in having a bureaucracy that perpetuates the nonintegration of a whole sector of society instead of assisting those individuals in becoming responsible and productive citizens.

I then understood the animosity against the BIA and federal regulations.

Your article ["Neglected Workforce," Business, Dec. 20] tells me that things haven't changed. If there were an executive order, things would move.

**Noriko Low**
Burlingame, Calif.

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## AGENDA

8–12:20 MORNING SESSION

- **Introduction and Welcome** *Vicki J. Brown — Senior Vice President, Worldwide Operations and Marketing*
- **eBusiness 2.0: Building the New Online Enterprise** *Frank Gens — Senior Vice President, Internet Research*
- **ASPs: Doing Business on the Brink of IT Industry Disruption** *Clare Gillan — Group Vice President, Applications and Information Access Research*
- **Hardware Evolution: Mapping the New Order** *Crawford Del Prete — Group Vice President, Computers, Components and Peripherals*
- **Defining the New Online Economy** *John Gantz — Senior Vice President and Chief Research Officer*

| Session A<br>1:45 - 3:25 | Session B<br>3:35 - 5:15 | Session C<br>3:25 - 4:05 |
|---|---|---|
| eCommerce 2.0: New Players, New Brands, New Rules, Many Winners | eCommerce 2000: The New Requirements for Success<br>Sean Kidder | 3-to-5 eBusiness 2.0: What's Going On at the Heart of the Economy?<br>TBA |
| The Revolution in Storage Models<br>Randy Kerr | The Next Wave in Computing Platforms and Peripherals<br>Bruce Stephen | Global Technologies Shaping the Future of Personal Systems<br>Timothy Giusto and Mario Morales |
| Linux: Server Operating System Alternative or Complement to Windows and Unix?<br>Dan Kusnetzky | Server Consolidation: The New Business Model for Application Service Providers<br>Jean Bozman | The Server Business 2.0: Transformation of the Server Industry<br>Debra Goldfarb |
| Microsoft .NET: Next Generation Technology or Next Generation Vaporware?<br>Al Gillen | Knowledge Management and Intelligent Portals: Evolutionary or Revolutionary?<br>Henry Morris | Strategies and Lessons in the Stampede to Application Integration<br>Dave Kendrick |
| eSupply Chain Management: Emerging Technology Investments to Gain Competitive Advantage<br>Christopher Hoffman | Building Customer Relationship Management to the Next Level<br>Marina A. Maronigan | The Application Service Company: What Does It Take to Build a Successful ASP Business?<br>Meredith Whalen |
| Storage Area Networks: The Future of Storage<br>Mark Leary | Wireless Wisdom, Wireless Foolishness<br>Mark Wilson | Wireless and the Mobile Internet |

4:15–5:00 CLOSING SESSION

- **Innovation in an Age of Creative Destruction** *Paul Saffo — Director and Roy Amara Fellow, Institute For The Future*

GREAT PLAINS

# BUSINESS



## CUSTOMER SERVICE

Illinois Power is using wireless networks to boost customer service as deregulation heats up competition in Illinois. The company has equipped service trucks with rugged laptops tied to a central computer-aided dispatching system, which has reduced costs and made service more reliable. ▸ 36

## MERGING IT

It isn't as easy for financial firms to meld their IT operations as it is for them to link their services. But while consolidating back-office systems is a massive challenge, banks and brokerages should be able to leverage the Internet to cross-market and distribute products. ▸ 39

## POST-MORTEMS

Because of the potentially dire outcome of a Y2K failure, companies were disciplined about meeting target dates. Ed Yourdon proposes that companies apply the same disciplined project-management methods to all future projects. ▸ 40

## STOCK FLOPS

Stock options are a big draw for many IT professionals, but these perks don't come with any guarantees. Many companies fail before getting to the initial public offering phase. So experts recommend that employees look at stock options as gravy, not as the main reason to take a job. ▸ 42

## HTML RESUME

The traditional résumé is on its way out, but the HTML résumé *isn't* taking its place. Recruiters say HTML résumés are incompatible with the databases they use, and the trend is to have applicants fill out profiles online. ▸ 48

## ONLINE HELP

E-commerce is forcing companies to make a Web customer's experience as easy as using the phone. This requires a change in the overall culture of the call center, which will stretch the call center staff's capabilities. And it won't be easy to build the infrastructure that ties these systems together. ▸ 48

## WOMEN'S WORK

Ms. MIS excerpts a 1943 article for males supervising women who were in the workforce during World War II. The gist: Women are second-rate employees who don't have the same ambition or abilities as men. Things have changed, but women still have a long way to go before there's parity. ▸ 50

## QUICKSTUDY

Based on the theory that for every action, there's an equal and opposite reaction, the Balanced Scorecard model helps determine what impact a potential change will have on the rest of the organization. ▸ 52

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MICHAEL ABRAMSON

# TALES FROM IT BOOT CAMP

**TECHNOLOGY TRAINING BOOT CAMPS** are no longer targeting novices. Instead, they're going after IT professionals and putting those who sign on through the paces. Critics argue that this doesn't address the underlying problem, which is a shortage of IT workers. The boot camps just retrain existing IT pros, which creates more opportunities for them but doesn't help untrained people.

52

# Wireless Net Helps Utility Improve Customer Service

*Facing new competition, Illinois Power finds network cuts costs, eases scheduling*

BY MATT HAMBLEN

ILLINOIS POWER CO. is plugging wireless technology into its customer service activities in a bid to improve its field operations and help it retain customers as Illinois opens its electric marketplace to competition.

Illinois Power, a subsidiary of $2.4 billion Illinova Corp. in Decatur, Ill., provides gas and electric services to nearly 1 million customers, mainly in central Illinois.

After years of planning and implementation, Illinois Power last month completed a rollout of a wireless land-antenna-based system that connects 500 service trucks equipped with laptops to a central computer-aided dispatching system, said Roger Koester, supervisor of energy delivery technology.

The system has reduced the utility's dispatching and service costs and allows customers to schedule service more reliably.

Koester said the project has cost millions but declined to elaborate for competitive reasons. Spending began in 1997, and Illinois Power expects to see a return on its investment by the end of this year.

For example, the project has generated thousands of dollars per month in fixed-cost savings because dispatching is now done centrally, said Koester. Still, he stressed that the main improvement has been in customer service. "A few years ago, there weren't that many competitors," said Koester. But since then, the competition "has just exploded."

Utilities nationwide are looking for ways to apply a variety of new technologies, including wireless networks and pagers, to gain a competitive edge as deregulation takes root, said David Burks, a financial analyst at J.J.B. Hilliard, W. L. Lyons Inc. in Louisville, Ky.

He added that Illinois Power's customer service project has helped the company increase its stock price during the past year, while the stock prices of 30 other utilities he follows have dropped.

Before Illinois Power upgraded its dispatching system with technology from BellSouth Wireless Data LP in Atlanta, the utility's 26 field offices would take phone requests from customers for services or repairs. The customers' calls would be written down by a customer service agent, who would then forward them to one of the dispatchers to coordinate work orders with repair crews.

Koester said. Many drivers now start their routes from home, eliminating trips to a central dispatcher. That's saving the company thousands of dollars in gas and making its repair crew more productive.

Because the trucks are also equipped with Global Positioning System locators tied to a central computer, Illinois Power can easily find a truck to respond to an emergency.

ILLINOIS POWER has saved thousands of dollars in fixed costs since installing laptops in 500 service trucks last month

Now, "the driver gets in his truck and instead of searching through paper, his day's work is loaded on the laptop," Koester said. Many drivers now start their routes from home, eliminating trips to a central dispatcher. That's saving the company thousands of dollars in gas and making its repair crew more productive.

Because the trucks are also equipped with Global Positioning System locators tied to a central computer, Illinois Power can easily find a truck to respond to an emergency.

Koester said some crew members have balked at learning the laptop system, but the majority like using the Windows 3.1-ready laptops, partly because they can take them from the truck docking stations to a meter or switch, where they can type in updated information.

Kevin Bennett, the business manager of Local 1306 of the International Brotherhood of Electrical Workers in Decatur, said some crew members have complained about how communications are compromised when their trucks are in a dead radio zone in the service territory. When that happens, he said, the repairmen have to leave a job and find a phone to contact a dispatcher.

Koester said Illinois Power at the outset created a partnership with BellSouth to build 27 wireless base stations throughout central Illinois to keep dead zones to a minimum.

In fact, he said, the wireless laptop project is so successful that it will be used as a model by Dynegy Inc., a Houston-based power company Illinova plans to merge with at the end of this month.

Illinois commercial customers were free to choose their electricity supplier as of Oct. 1. Home users will be able to choose starting next year, according to the Illinois Commerce Commission.

The commission said only Arthur Daniels Midland Co. in Decatur has said it will be working with another supplier, AmerenCIPS in St. Louis, ending its contracts with Illinois Power in July.

# Net Managers' Role Changes

*Web pulls net techs out of wiring closet*

BY JAMES COPE

Once stray dogs begging at the enterprise back door, Internet protocols and the browser interface have become network pets.

In many instances, they're now running the show, making corporate networks look a lot more like Internet service providers than yesterday's LAN and WAN setups and bringing with them new demands. Those include a better understanding of business processes on the part of network staff, which means information technology is now treated as a strategic asset, instead of just a support service.

Network managers who used to concentrate solely on the electronic infrastructure now must communicate beyond the bounds of the wiring closet, which calls for a level of human relations skills normally associated with other departments.

"The browser interface has changed the way people network, period," said V. J. Kanabard, who directs the new e-commerce master of science degree program at Boston University's Metropolitan College.

Jack Gammon, a network manager at St. Vincent's Hospital in Birmingham, Ala., agreed. "Most everything is going Web-based," he said. "Even network management is going that way. You end up having Web servers everywhere."

In large enterprises, even old brick-and-mortar applications are being Web-enabled. According to Perry Harris, an analyst at The Yankee Group in Boston, this evolution demands an IT staff that has a broad knowledge of disparate platforms, both legacy and new.

## Takes More Than Tech Skills

But the Webification trend in enterprise networking asks network staff for more than technical knowledge.

It requires people who understand not just networking, but internetworking, too, which encompasses business skills, technical skills and a sense of urgency that can mean the difference between success and failure, said John Pucket, CIO at Toysmart.com Inc. in Waltham, Mass.

According to Doug White, a partner at KPMG Peat Marwick LLP's network integration practice in Chicago, "The technical manager represented a cost center to the business whose job was to make sure that IT didn't impede business.

"Today, you need to be a business enabler," White said. "[Networking] is all about the metrics of cost containment, increased revenues from the existing client base and new clients. These are business drivers. Traditionally, it would have been about uptime and downtime." Now uptime is a given, he said.

Ram Prabhu, manager of corporate communications at Millipore Corp., a manufacturer of filters used in microbiology and electronics in Bedford, Mass., agreed. He said that before Millipore embraced the Web model, it was as though the network didn't exist. Now he works closely with Thomas Anderson, director of corporate communications, to advance Millipore's business-to-business e-commerce initiative.

Another factor that's driving Webification of corporate networks is that everyone inside and outside the enterprise is

*Net Managers, page 39*

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# Film Licensing Moves Online

*Millions of distribution opportunities go begging today on the Web*

BY CHRISTINE McGEEVER

HOLLYWOOD Software Inc. is launching an Internet-based rights licensing and management application at the American Film Market Conference next month in Santa Monica, Calif.

Called Rightsmart.com, the Los Angeles-based service moves a critical film industry business function out of a studio's corporate office and onto the Web, reducing the cost of film distribution. It also provides the licensing structure smaller independent filmmakers need in order to bring their work to audiences worldwide.

According to David Gajda, Hollywood Software's CEO, distribution licensing is one of the most mission-critical business functions within a studio. Traditional methods require film producers to enlist agents, accountants and lawyers to oversee contract generation. "The [application service provider] implementation means that creative types don't have to deal with the back-office stuff to distribute their products," Gajda said. "They can basically do it themselves."

The do-it-yourself approach is important for independent filmmakers. Gajda said 15,000 films are produced worldwide each year, with fewer than 1,000 finding a commercial avenue of distribution. Factor in video, television and cable, and the number is more than 100,000. Gajda said approximately 10,000 different types of rights can be sold for any property. And based on bis estimates, a potential 140 million individual rights sales aren't being made. These lost opportunities are exactly the target market for Rightsmart.com.

Rightsmart.com will enable potential buyers to search online for available licensing rights for features, shorts, direct-to-vidco products, TV movies and episodic series. Buyers can set up automatic searches for information according to predefined profiles.

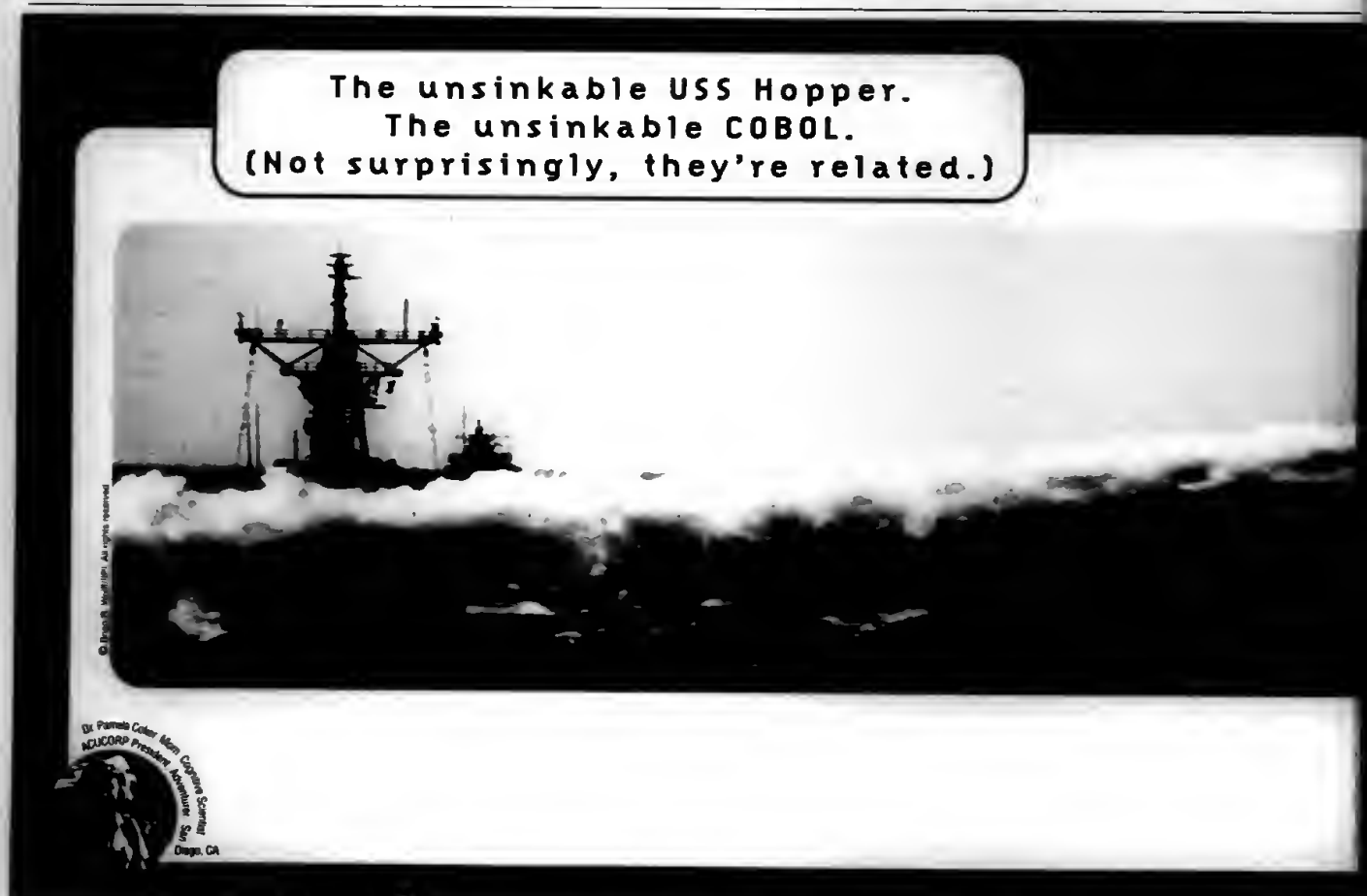
Michael Leventhal, an attorney at Squadron, Ellenoff, Plesent & Sheinfeld LLP in Century City, Calif., said a system such as Rightsmart.com is likely to reduce distribution costs by cutting out intermediaries. Leventhal, who specializes in intellectual property issues in the entertainment and information technology industries, said, "Every major studio uses some [automated system] to track their own rights," but such applications are primarily for internal use and don't open up the market the way a Web-based system like Rightsmart.com would. "Potentially, it's huge," Leventhal said.

Bertelsmann AG has announced it will demonstrate a Web-based digital rights management service, called Digital World Services, at the Midem 2000 music industry conference this week in Cannes, France. Digital World Services will provide content preparation and secure packaging, usage and financial clearing.

## SNAPSHOT

### Did You Know?

- **In 2002, the market for cellular information services will amount to $20 billion.**
  SOURCE: ANDREW SEYBOLD, OUTLOOK.COM
- **At the beginning of 2000, there were between 11 million and 12 million personal digital assistants in the world. In 2002, there are expected to be 35 million.**
  SOURCE: IDVUM
- **By the end of 2000, there will be approximately 500 million subscribers to cellular phone operators.**
  SOURCE: DATAQUEST

# Despite Deregulation, Merging Financial Companies Still Face Technical Hurdles

*Disparity of firms' back-office systems cited by experts*

BY THOMAS HOFFMAN
NEW YORK

Recent legislatioo on financial-services modernization knocks down a lot of the walls that once separated banks, brokerages and insurance companies from one another.

But it doesn't collapse the digital barriers that make it challenging for firms in these sectors to meld their information technology operatinns.

For example, banks, brokerages and insurance companies each house different types of applications and operating platforms to run their respective businesses (for example, banks process deposits, and brokers process trades).

The challenge nf consolidating those disparate back-office environments "is a huge hurdle to get over," said Richard T. Chase, general counsel at U.S. Bancorp Piper Jaffrey Inc. in Minneapolis.

Since regulatory reform was introduced late last year, industry experts have said they expect a wave of merger activity among banks, brokerages and insurers tn create the kind nf universal financial shopping centers that have succeeded in Europe.

Chase was one of the speakers at a Securities Industry Association conference held here earlier this month that focused no the ramifications nf the new legislation, known as the Gramm-Leach-Bliley Act.

## Internet's Wide Open

But even thnugh merging banks and brokerages might have difficulty consolidating their back-office systems, they should be able to leverage the Internet to help them cross-market and distribute products across their customer bases, said Amanda L. Gimble, co-head nf corporate strategy and planning at Merrill Lynch & Co. in New Ynrk.

"What this [legislation] says is that the financial community can eoter the Internet any way it wants," said Rep. Jim Leach (R-Iowa), chairman of the House Banking and Finance Committee and a principal author of the legislation.

Since banks have stronger balance sheets and greater assets than hrokerage firms, they most likely will be the acquirers in most deals.

As such, brokerage firms "will feel mnre competition than opportunities" as a result nf the new financial landscape, said Adam Schneider, a partoer and head nf e-commerce initiatives for financial services at Deloitte Consulting in New York.

To compete, savvy brokerages will "arm their customers" with electronic trading tools while expanding the communications capabilities for their salespeople to interact and respond tn customer needs, Schneider added.

*Continued from page 36*

# Net Managers

on the oetwork. It's how business communication takes place, which, according to White, means groups previously not on the network now are often part of the network infrastructure. That lets other departments utilize elements of these nnce-proprietary applications from desktops nr through the Internet. Filing expense reports and updating employee benefits through a browser are just two examples.

As more users become participants in the networking process, the onus is on the network staff to understand the business and respond accordingly, White says.

"Groups that don't get the responsiveness [from in-house networking staff] hire their nwn," he said.

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# WORKSTYLES

## What It's Like to Work at . . . Saturn Corp.

**Interviewee:** Roger Kash, manager of information technology infrastructure and operations

**Company:** Saturn Corp., a wholly owned subsidiary of General Motors Corp.

**Main location:** Spring Hill, Tenn., 35 miles south of Nashville

**Tenure:** Almost 14 years. "I was our 200th employee. We were founded in 1985, and I started in April '86 in controls engineering in the manufacturing IT group."

**Number of IT employees:** About 50 full-time staff and 100 to 150 contractors

**Who does what?** Full-time staff manages and sets strategies, procures equipment, selects contractors and sets assignments, develops business cases and defines scope of work. Contractors handle operations, troubleshooting, deployment, implementation, software development, etc. "Full-timers are interacting more with people in the plants and with [internal] customers."

**Number of employees (end users):** About 15,000 in Spring Hill, Detroit and Wilmington, Del.

**How do most employees get to work?** "Many drive Saturns. GM offers an employee discount. The discount applies to all GM products."

**Workday:** "Most work a typical 7:30 a.m. to 4:30 or 5 p.m. day. It really depends on what you do. If you're in operations, you follow production hours. If you're in support or maintenance, you set your own hours but do whatever is necessary."

**Kind of offices:** "We all have the same office arrangements – the Saturn [CIO] sits in a cube on my left, and one of my infrastructure managers is in a cube on my right. IT is scattered all over and generally co-located with end users."

**Computers:** Almost all NT workstations, with some Unix-based machines

**Percentage of staff that telecommutes on a given day:** "Not very many. We all come into the office because we build a product, so the focus is to do whatever it takes to support that, and it's difficult to do that from home."

**What kind of in-house training do you get?** "We have GM University, and we bring in training for whatever we need from Microsoft, Digital and local companies."

**On-site day care?** "Not right on-site, but very nearby. It's a public facility, but it's supported by Saturn."

**In-house cafeteria/food service:** Yes, several cafeterias. "They serve three meals a day. The menu varies – sandwiches, hot meals, pancakes, prime rib occasionally."

**Food rating (scale of 1 to 10, with 10 the best):** 5. "I eat in the plant and off-site."

**The one thing everyone complains about:** [Laughs.] "Well, probably 'hurry up and wait' – the bureaucracy in GM, in that it takes a long time to get what you need to get the job done. GM is a big company. Saturn is not completely autonomous. We have a new IS group in GM, and we are part of that team now – we're still Saturn employees, but part of the GM IS organization."

**Little perks:** [Laughs.] "We get to see and use the latest technology before the public does – you could call that a perk. In IT, we don't have any particular perks over other areas of the company. We have a lot more participation than people do at most companies. And we have regular GM benefits, which are competitive."

**Would employees feel comfortable e-mailing the CEO?** [Laughs.] "Sure. Saturn employees would feel comfortable e-mailing the president of General Motors."

**Quote:** "Compared to other manufacturing IT environments, Saturn is extremely progressive. I would put our plant in one of top best two or three in the U.S., and you can validate that with [our vendors], Microsoft, Cisco and Compaq/Digital. So, from that perspective, it's about as good as it gets. Now, Saturn is being influenced a lot more by GM than it was before, but GM lets Saturn be what it is."

– *Leslie Goff*

ED YOURDON

# Y2K success lessons

**THERE WILL BE SEVERAL Y2K post-mortems in the coming months. Some will assess the costs of Y2K projects and the damages associated with Y2K failures. Others will investigate the puzzling success of less-prepared countries and unprepared small businesses. But the most useful form of post-mortem for IT managers will focus on the *reasons* for success, especially in the organizations that took Y2K seriously, spent an enormous amount of time and energy on remediation and testing and subsequently discovered that it had all paid off.**

Some IT managers might retort, "*Of course* we succeeded! That's what we expected! What's the big deal?" But if it wasn't a big deal, 80% of large U.S. companies wouldn't have had Y2K "command centers" to monitor the rollover. Even if we exuded confidence publicly, many organizations spent considerable sums for both command centers and contingency plans, just in case of serious problems. History suggests that such precautions were well founded: We embark upon *every* new IT project with great confidence, but when the dust settles, many projects are delivered late, and/or over budget and/or full of bugs.

Before we congratulate ourselves too enthusiastically for our Y2K success, we should admit that in many cases, we *failed* from a budgetary perspective, and that's it's too early to tell whether we failed in terms of bugs. Many large organizations spent two to three times their original estimates; the U.S. government, for example, estimated in 1997 that it would spend roughly $2 billion on Y2K repairs, but that gradually rose to approximately $8 billion by last fall. That's a polite way of saying that it exceeded its original budget by a factor of four. As for bugs: Most organizations wait for a year of operational experience before they make final judgments about the quality of the delivered system. Enthusiastic as we may be, it's a little too early to tell how many Y2K bugs will eventually be uncovered.

*If we could do it this time, why not do it next time and every time?*

But one thing is clear: Most organizations *did* deliver and deploy Y2K-compliant systems in time for the non-negotiable Jan. 1 deadline — and most systems ran well enough to keep from crashing immediately. Even this aspect of success was better than we might reasonably have expected because *everyone* achieved it, with no spectacular explosions, nuclear meltdowns, power blackouts, toxic leaks, plane crashes or bank failures — anywhere. So I ask again: How did we pull it off?

When I first predicted a pessimistic Y2K outcome during a conference presentation a few years ago, an IT manager in the back of the room shouted out loudly enough for everyone to hear: "*This time* it will be different!" I disagreed with him at the time, but I'm beginning to think he was right. *This time*, we really did get senior management's involvement and support, all the way up to, and including, the CEO and the board of directors. *This time*, we really did perform a triage to separate the "must-do" Y2K requirements from the "should-do" and the "could-do" categories. *This time*, we really did perform risk management and contingency planning — because *this time*, every decision-maker in the organization understood that failure to do so could result in bankruptcy — as compared with the typical IT project failure, which is embarrassing but not fatal. *This time*, we insisted that unit managers follow a disciplined project-management methodology, which included filling out weekly status reports with detailed information about progress, problems and risk. I know of one large company that used the same project-management methodology it had developed for every other project — but *this time*, the company *insisted* that it be used and the CEO talked to any team leader who balked at the paperwork involved.

This leads to an obvious question: If we could do it this time, why not do it next time and every time? In many companies, success with Y2K could become the role model for success in all future IT projects. ▶

*Yourdon heads the year 2000 service at Cutter Consortium in Arlington, Mass. Contact him at* www.yourdon.com.

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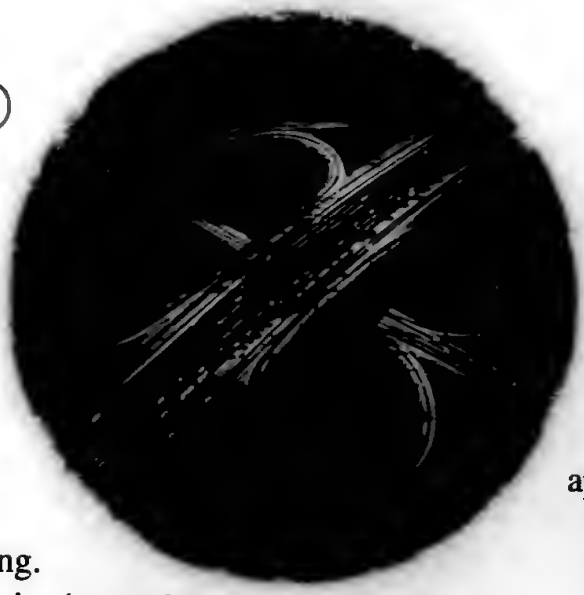

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Stock options are all the rage at many Internet start-ups and vendor companies. But before you sign on in the hopes of getting rich, be warned that many never pay out. By Erik Sherman

# Stock Options: THE UGLY T

WITH STORIES OF INTERNET start-ups trumpeted day and night, sometimes it seems like everyone who can spell *computers* is getting rich. So it's only natural for IT pros to dream of a professional shortcut to the good life — ooe paved with stock options.

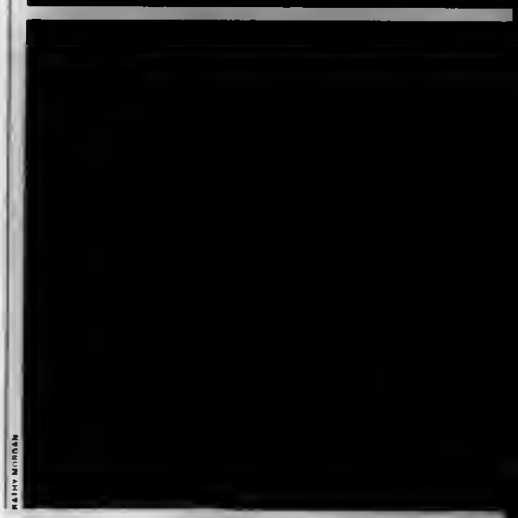
It's little wooder that options have become a standard tool in corporate compensatioo kits. A stock option is a promise that someone can buy shares of a company in the future at a previously fixed price.

It sounds great: If the stock does well, employees can make healthy profits with no outlay until they exercise the option, either when a start-up has an initial public offering (IPO) or wheo the stock of an already publicly held company rises. But be cautious. Options can be a big gamble, and they come with strings that pull you when you want to push on.

Not everyone in informatioo technology gets stock options. Many Fortune 500 firms ofteo provide them only to senior managers or those with skills that are in especially high demand and short supply. The real options bonanza is at start-ups, which don't have the money for high salaries but hope to make good oo their tremendous growth potential. But a start-up's stock options doo't come with guarantees.

David Alward and Anup Patwardhan worked at Sun Microsystems Inc., where stock options were available "only to various elite people," says Alward. Rather than dream of options, both men left within a few mooths of each other to work for the same Internet start-up: Onebox.com Inc., a San Mateo, Calif., firm that provides free Internet messaging services.

"Living in the [Silicon] Valley, you're out of luck in



buying a house, and stock options make that dream a possibility at some point," says Alward, an operations engineer. Patwardhan, a systems engineer, says he also hopes to buy a house — as well as have some financial reserves when he gets married next year.

They may get their stake, but the odds are against it. Many companies fail before getting to the point of launching an IPO, making the options worth nothing more than a pile of scrap paper.

Before heading the IT practice in the Oak Ridge, Tenn., office of consulting firm Radian International, Ken Hill experienced the downside of stock options at a venture capital-backed start-up. He had options to buy stock at well under $1 per share at the start-up, but the company went belly-up, not public.

"In a venture-funded company like that, they will go and go and go until some point when you can't quite make the payroll," says Hill. He received no options at Radian, but he says options are just one factor to consider when weighing a job opportunity.

"The reason for accepting at Radian was the stability and the opportunity for growth," says Hill. "They were expanding their information technology business, and I had a chance to be a large part of that."

It's important to remember that stock options aren't a form of altruism. Companies have specific reasons for offering them. One reason is that they might expect employees with a vested interest in the business to work harder. Another is to decrease the amount of money they have to spend on salaries. A start-up, for example, is unlikely to have as much money as an established company would have for payroll. Instead, it can offer more modest compensation and sweeten the deal with options.

## TAKING STOCK OF YOUR OPTIONS

Steps to getting the most from your stock options:

- Wait for the vesting period to come to a close.
- Wait for the IPO to take place.
- Wait for the end of the lockout period, which could be six months to a year or more after the IPO.
- Check to see if your shares are registered. If not, you have to wait until the company registers them.
- Be sure the current stock price is higher than the option price, otherwise you can't make money.
- The company may suggest a broker who's handling the options. Otherwise, plan on buying and selling at the same time so there's enough money to pay for the options.
- Pay the income, Social Security and Medicare taxes.
- Enjoy whatever you have left. – *Erik Sherman*

What many potential stock recipients forget, though, is the third purpose of stock options.

"The whole point of options is to put handcuffs on people," says Jeff Leon, managing director at the New York office of recruiting firm Russell Reynolds Associates Inc. Employees usually don't receive all their options at once. Rather, options typically vest, or become active, over three to five years.

Someone receiving $30,000 in options might get 20% of them per year, with receipt of each block contingent on remaining at the company. Leave prematurely, and those nonvested options go up in smoke.

That's if the company plans to file an IPO. A recent Ernst & Young LLP survey of Internet start-ups showed that almost half of the companies studied had no plans to go public in the foreseeable future.

However, even if an employer does makes it big with an IPO, there's no guarantee that employees will too. According to Christopher Loiacono, a certified public accountant and a tax partner at Richard A. Eisner & Co. in New York, having an option doesn't mean you always make money off stock. The bulk of options are so-called nonqualified, which, upon being exercised, are treated as income and are subject to withholding taxes.

"Between coming up with the exercise price and the taxes, you could be left with less than 50% of what you think you have," says Loiacono.

Furthermore, when a company goes public, the underwriters — financial people who make the process possible — typically require a lockout period of six months to a year during which employees can't sell their stock. If the stock price peaks early and then drops, gone is the chance for a quick killing. There's also no guarantee when shares will be registered, a necessary step to being able to sell them. Employees may have nonliquid assets for a long time.

The best strategy is to look at options as gravy, not as the main reason to take a job, says David Schnitt, national director of IT services at Santa Ana, Calif., outsourcing company Resources Connection Inc.

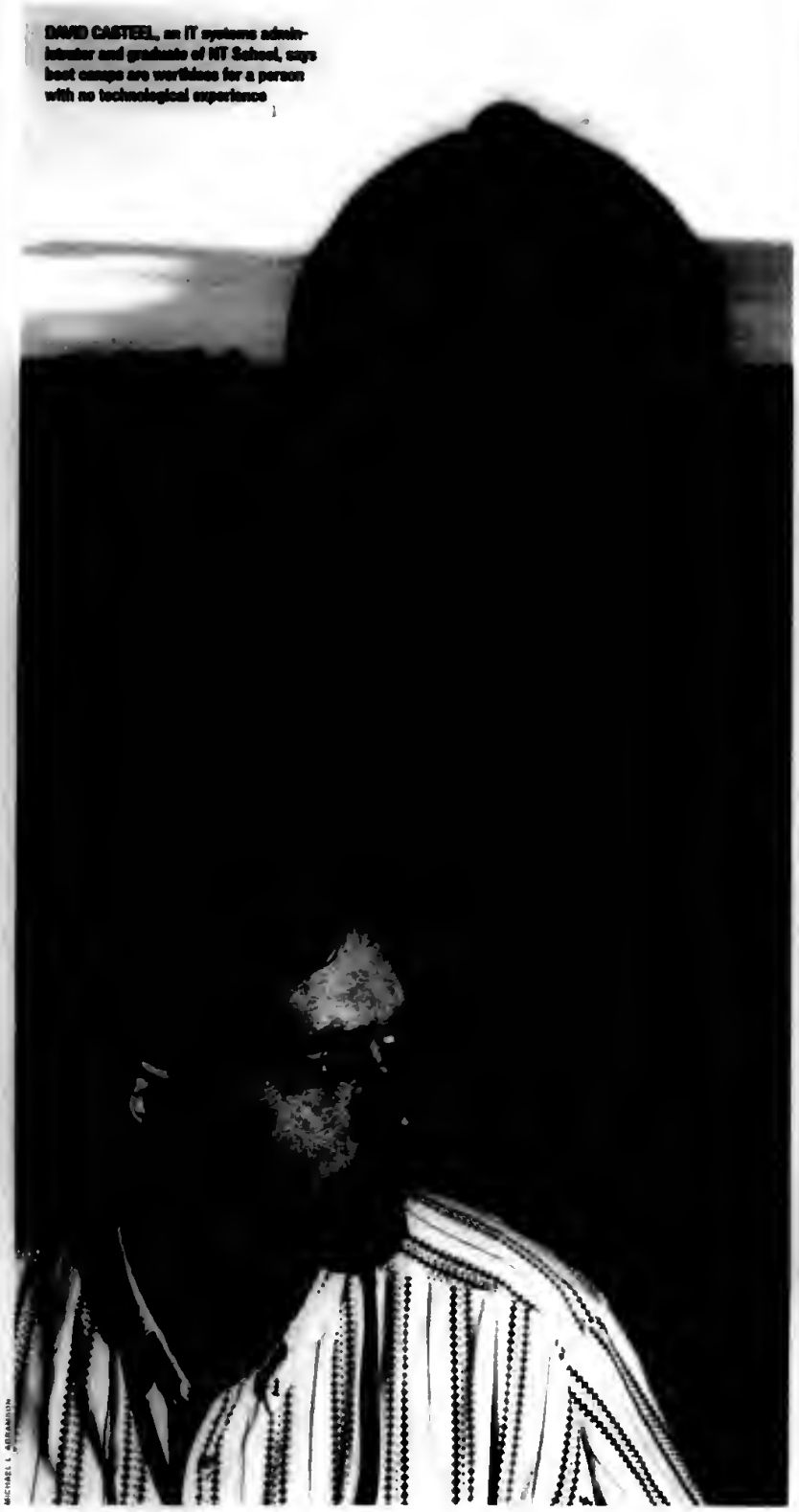
If people don't have that outlook, they "may end up working at companies they don't like or working with people they don't like," says Schnitt.

*Sherman is a freelance writer in Marshfield, Mass.*

"A venture-funded company . . . will go and go and go . . . until you can't quite make the payroll."

KEN HILL,
RADIAN INTERNATIONAL

TRUTH



DAVID CASTEEL, an IT systems administrator and graduate of NT School, says boot camps are worthless for a person with no technological experience

MICHAEL L. ABRAMSON

# TALES FROM BOO

REMEMBER those fast-track training courses that promised to turn housewives into techies? Well, LaTrina Wilson isn't exactly a housewife. But a couple of years ago, she changed careers from engineering to Y2K programmer/trainer after one such four-week class at Complete Business Solutions Inc. (CBSI), an information technology consulting firm in Farmington Hills, Mich.

Did I mention that she already had a bachelor's degree in computer scieoce?

It seems all those two-week certifications come with unprinted disclaimers. Yes, they'll get you certified, but only if you fulfill certain prerequisites that will guarantee course success.

As a result, these instant techie "boot camps" aren't what they started out to be. None of them are molding nontechs into techs. Instead, all those Microsoft, Cisco, Novell and PC troubleshooting boot camps have become training grounds for the already trained.

At the very least, an "advanced PC troubleshooting course" may offer nootechs (with a prerequisite in hardware installation) the "fouodations for other classes," says one boot camp call center agent.

"You would need other things in addition to these classes to get your foot in the door of a technology job," be acknowledges. "You will oeed certifications, college courses, more tech classes. . . ."

Wave Technologies International Inc. in St. Louis, Career Blazers Inc. in New York, Learning Tree International Inc. in Los Angeles and CompuMaster Inc. in Acton, Mass., all require pretty much the same thing: "prior technology experience, foundational courses, maybe even a two-year degree," he says.

So what are these boot camps offering? Windows NT boot camps promise experienced NT workers their certifications. Cisco boot camps offer the same for oetworkers with prior experience. And Novell — pretty much the same. In that sense, they are living up to their claims like, "Get NT-certified in I0 days."

"For the persoo with no experience, boot camps are worthless," says David Casteel, an IT systems administrator and graduate of NT School in Clearwater, Fla.

# T CAMP

## Technology training boot camps aren't what they used to be. No longer targeted to the technologically naive, they now shoot for the well-trained IT veteran, with enough prerequisites to almost guarantee your success. By Deborah Radcliff

"There was this guy who went to one of these nine-month college courses in the Microsoft track, and networking and then he went to NT School to get certified. He failed."

But failure rates are low, mostly because boot camps screen candidates to assure higher success rates, according to David Kaufman, president of NT School. The school generally takes only students with three years of experience in network engineering. Some 95% of NT School studeots fit this demographic.

However, for that other 5%, NT School has been known to take on lesser qualifications — "someone who understands NetWare and has been working in the field for two years. But we also insist that, before they come here, they study from the Microsoft Certified Systems Engineer [MCSE] core requirements study kit," he explains. "That's for people who are marginal."

### Not for the Fainthearted

That's because these two- to four-week boot camps pack in a ton of material. NT School's program covers the entire NT product line — workstations, NT server in the enterprise, TCP/IP, Internet Information Server 4 and oetworking essentials — all in 14 consecutive days. Students attend class, usually for approximately 10 hours per day, and then study for tests on each subject. They can't go onto the next subject in that course uotil they pass a test oo the previous one.

"It's a two-week course covering six subjects, so you're spending approximately two days on each topic, then cramming for tests and starting the next area of study. It's grueling," says Casteel, who had seveo years of experience in technology and four and a half years working on NT before taking his MCSE course at NT School last year.

Since these courses are intensive, it's important to ask yourself what value they will really offer you in new experience. Wilson says she found the Cobol courses at CBSI to be invaluable. Not only did she learn enough to train others, but she also earned her Cobol programming certificate through the Institute of Certification and Computing Professionals. She's since taken some Java and JavaScript courses CBSI recently began offering.

And ask yourself what value these boot camps will add to your résumé. Most hiring managers consider boot camps an adjunct to real-world experience (and hopefully formal schooling), according to Greg Scileppi, executive director of RHI Consulting Inc., a Menlo Park, Calif.-based job placement and temporary staffing firm.

"Experience and formal education make much more impact on hiring decisions," Scileppi says. But if the experience is there, the boot camp certifications certainly do add value, he adds.

And because boot camp training is being used by the already experienced, employers don't see boot camps as filling the IT workforce shortage anytime soon.

"This doesn't really help the situation much because the whole premise of retraining is to take unskilled workers or workers with skill gaps, teach them something new and try to fill openings," says Mike Petosa, chief technology officer at IT job placement firm Pencom Systems Inc. in New York. "With our national unemployment level down below the noise level and a negative growth in the IT worker population, all such training seems to be doing is helping IT professionals that are already happily employed gain the skills to move around, or keep them up-to-date with new technologies."

### Do Your Homework

If you are thinking of taking a certification boot camp, it pays to do your homework the way John Maher did. Not only do prices vary between $4,000 and $8,000 (the average NT certification camp costs around $6,000), but so does quality.

Maher, a systems engineer at a large telecommunications company, should know. He attended his first Windows NT boot camp in January of 1998. "It was very poor," he says. He ended up taking another one a year later.

Before making a decision, check Web sites for prerequisites. Then ask what type of screening the schools do. And check references before making a decision. ◗

*Radcliff is a freelance writer in Northern California.*

### What We're Seeing

**Get MCSD Certified in Two Weeks GUARANTEED.**
– Wave Technologies International

**CSE Certification can change your life. Let us help you reach your goals in life!**
– Taken off the front page of ASAP, the Exeter, N.H.-based MCSE boot camp Web site

### Latest Boot Camps? How About HTML?

While most boot camps can't take homemakers and give them an instant career change, there are some that say they can at least give them a start in technology, providing the job isn't too ... well, technical.

Between 1997 and 1998, for example, **CBSI** trained 25 nonskilled workers in basic Y2K code-cleaning and paid them $30,000 to $45,000 per year after training. Of course, even these students needed to pass an "aptitude test" before taking the course. Then, after the four-week boot camp, "they couldn't get into a lot of detail, but they could do basic year 2000 changes," says **Raj Vattikuti,** president and chief operating officer at CBSI.

**LaTrina Wilson,** one of CBSI's students, adds, "It doesn't take a rocket scientist to do basic Y2K code fixes."

Now, the e-commerce boom is creating a new demand for Web development experts. So keep an eye out for Java scripting and other such boot camps, says Vattikuti. (After all, Vattikuti needs something to do with all those Y2K programmers now out of work.)

"For some jobs, you can take nontechnology people – those creative in the e-commerce world – and they can learn to duplicate and code screens," Vattikuti explains. "They can learn a very simple scripting language like HTML so they don't have to do much programming or business logic."

Could you imagine courses like "Instant Java" or "HTML on the Spot"? – *Deborah Radcliff*

### Boot Camp Web Sites

**ASAP** *(www.asap-computer.com)*
MCSE certification

**Career Blazers** *(www.careerblazers.com)*
Offers employer-based training and certifications, mainly CNE (Certified NetWare Engineer), Novell, PC Specialist

**CompuMaster** *(www.compumaster.net)*
Troubleshooting PCs

**Global Knowledge Americas** *(www.globalknowledge.com)*
A+, Nortel Networks, Cisco, Microsoft, TCP/IP, Web and more

**Learning Tree** *(www.learningtree.com)*
Windows NT, 2000 certifications, C++, Java, PowerBuilder, software development, client/server classes

**NT School** *(www.ntschool.com)*
MCSE and, soon, basic Microsoft

**Wave Technologies International** *(www.wavetech.com)*
Microsoft Certified System Developer

# Demise of the HTML résumé

ERIC YANG

BY STEVE ALEXANDER

**Online job hunting is changing for information technology professionals, and the traditional résumé may fall victim to that change. Recruiters who work for career-related Web sites say the trend is to have applicants fill out profiles, which are more useful than résumés.**

**"The profile is really where the industry is headed," says John Elliott, director of customer fulfillment systems at Alternative Resources Corp., a Barrington, Ill.-based company that places IT contractors.**

**"The profile results in a résumélike data source that is much more detailed in specific skills and competencies and gives the recruiter a consistent format that matches tightly with the requirements of customer companies," he says.**

That's not to say that the e-mail résumé is dead. Profiles are just catching on, and most ooline IT job-seekers still post résumés on Web sites or e-mail them to recruiters. But recruiters say the new cousin of the traditional e-mail résumé, the HTML résumé, which comes complete with links and graphics, is a step in the wrong direction for IT job applicants.

Recruiters say they don't like résumés created with the Internet programming language HTML because the format takes too long to read. Also, the use of links requires that a recruiter go to the trouble nf visiting a Web site tn see information that should have been included in the résumé.

"When you are a recruiter, your life is filled with résumés," says Michael Forrest, president of Indianapolis-based JobOptions LLC, which runs the résumé-posting site *www.joboptions.com*. "A lot nf it becomes homework, and recruiters sit at home, having a beer while paging through résumés, trying to screen people out," Forrest says.

"What they want to be able to dn is jump quickly to the applicant's most recent position, then jump over tn the educational information," be adds. "The more variance there is from a standard résumé, the more difficult it is to compare apples tn apples."

Others agree. "The HTML résumé is often nn better than a résumé presented in Wnrd nr regular ASCII text. It doesn't benefit us as recruiters," says Pam Parker, a human resources cnnsultant at Palo Alto, Calif.-based Career Ceotral Cnrp., which operates the site *www.careercentral.com*.

"The reality is that most recruiters aren't there yet for HTML," says Joel Wilkinson, chief career-development specialist at New York-based Career Experience Cnrp., which offers career advice to IT job applicants. Parker and Wilkinsoo say no more than 10% nf the résumés they see are written in HTML.

## Technical Difficulties

Recruiters say job applicants gain nothing by demonstrating their prowess with HTML, since it's oot a hot IT skill. What's mnre, tbe time IT people spend creating HTML résumés may be wasted, because the recruiter generally can't use the information in that form. Most searchable résumé databases are text-nnly, which means an HTML résumé must be converted tn text before being entered intn a database.

"We dump résumés into a resource database that uses raw text and doesn't accommodate HTML résumés," Elliott says. "Sn an HTML résumé must be saved as a text file, which adds annther step fnr the recruiter."

To make matters worse, many client companies expect recruiters to transmit batches nf résumés via e-mail. Since many of thnse clients don't have HTML-enabled e-mail, the HTML either is cooverted to text or, worse, isn't converted and becomes gibberish, making the HTML tags visible within the text.

"Often, the client is seeing less of the HTML résumé than we are," notes Parker.

DID YOU KNOW?

***What's wrong with HTML résumés:***

- The trend is toward online profiling, not nnline résumés.
- They take too lnng tn read.
- Most résumé databases are text-only, so HTML code is lost.

The answer for IT professionals is to concentrate on content, says Linda Natansohn, senior vice president of ventures at TMP Worldwide Inc.'s interactive divisioo in Maynard, Mass., which nperates the job-posting Web site Mnnster. com.

"If you are a proficient technolngy professional, it is going to show in the profile you fill out or in the content of your résumé," she says. "Whether nr not your résumé is in HTML isn't going to convince an HR person that you would be a better hire."

*Alexander is a freelance writer in Edina, Minn.*

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# The Web Meets the CALL CENT

**The e-commerce explosion is forcing companies to make a Web customer's experience as easy as using the phone. By Deborah Radcliff**

CORPORATIONS have invested millions of dollars to make the call center the ultimate vehicle of customer service. But now customers are beginning to demand that same level of service over the Web.

"The call center is really the nerve center of a corporation's customer relationships. And now we're seeing the tele-based organization become a clearinghouse for new Web-based marketing campaigns," says Jay Gauthier, executive vice president of Boston-based Berkeley Enterprise Partners Inc., a consulting firm that specializes in call centers and customer relationship management (CRM) application integration. "As a result, the call center will need to manage Web-based collaboration, chat and large screens of e-mail."

Analysts predict it will take about 18 months before most corporate call centers will be able to support Web-based presales and postsales help.

"In the early days of electronic customer interactions, everyone focused on the phone, with maybe a handful of people to get to e-mail when they could. We're getting past that," says Patrick Bultema, president of Monument, Colo.-based Bultema Co., a consultancy that specializes in CRM strategies. "Now, merchants must put as much emphasis on electronic media interaction as they do on the phone."

Not only is this shift imminent, but it will also overturn existing customer relationship processes, change the overall culture of the call center, stretch the call center staff's capabilities and require an entirely new approach to training call center agents.

"There's a real push in call centers to handle customer inquiries the way the customer wants to respond," says Jim Dickie, a managing partner at Insight Technology Group (ITG), a CRM project benchmarking company in Boulder, Colo. "We think the trend will be to couple sales force automation, e-business and call center systems together."

Information technology project leaders will find that it won't be easy to build a system that ties the shopper's current Web experience into the phone system and back-office systems for customer history. Today's software offerings are, at best, fragmented, say analysts. There is no single product that will link the Web shopper — and the shopper's current Web activity — to customer history and then connect it all to a live call center agent at both the phone and browser levels.

Electronic businesses are having trouble marrying all the data and applications, say analysts. For that reason, few electronic businesses (a little less than 30%, according to an ITG study) have successfully integrated their call centers with the Web.

**IN THE WEB GAME**

**Internet superstore Buy.com Inc. has integrated live agent chat on its site:** *www.buy.com/corp/servicecenter/servicecenter.asp?topic=servicecenter*

One of the few trailblazers in this area is Cisco Systems Inc. in San Jose. Cisco offers more than one online live customer help feature, including live chat and e-mail. But the most advanced application is its telephone button. When customers click the button, they — and the Web page they're on — connect directly to a Cisco call center agent over the phone.

"When we pick up the call, our screen will pop up [and tell us] what the customer's seeing at that point," says Theresa Volney-Wilkinson, manager of Cisco's customer response center in Research Triangle Park, N.C. "Now we're speaking to that customer, we can see right where that customer is, and we can take over their browser and guide them to where they want to go."

With this interactive application, the customer doesn't need to explain the situation repeatedly. And the agent can even fill out forms for the customer, using history data already in the system.

The Cisco team began by analyzing its customer service response workflow, such as keystrokes, screen shots and agent actions. It discovered myriad inefficiencies — agents moving through a variety of applications, screens and even other machines — that needed re-engineering before the new application could be built.

The chief reason such projects fail is that IT teams forget this vital first step, according to Gauthier.

## Step 1 at SafeCo: Re-engineering

SafeCo Property and Casualty Insurance Cos. in Seattle recently complet-

## Getting Started

*Four things to consider when you want to integrate your e-commerce operations into your call center*

**1.** Decide how you want to summarize information for the customer. What do you want them to see on their customized Web site? How will you customize third-party packaged applications to present data to the customer?

**2.** Prepare to summarize customer data across multiple applications. Build reference files to identify the customer as an individual across all systems involved. When a customer calls in, the system files should access the customer history database and the customer's current online activities.

**3.** As you get into application integration, make sure the organization has a strong underlying database to store customer history.

**4.** Link this automated technology to people who depend on that call center, such as your sales and marketing people. Plan on making that data available over the Internet to support different sales channels. For example, you could build a number of opportunity management systems used for leads and so on.

SOURCE: JAY GAUTHIER @BERKELEY ENTERPRISE PARTNERS, BOSTON

ed a similar evaluation of its workflow processes. As a result, SafeCo is consolidating its 28 call centers into four centers with common processes, so that the company can beef up its Web-based customer service offerings.

"Even before we get these technologies, we have to overhaul our call center processes to achieve consistency," says Jeffrey Ward, who is responsible for organizational design, workflow and training for SafeCo's call center initiative. "We're also mapping out the business processes to see who all our players are — the insured, the customer service rep, the claims department, even our auto body shops. We're also looking at all of our forms, papers and e-forms to understand how the new technologies will influence them."

The ultimate goal is to prepare each call center to handle policy and billing questions from insurance agents, customers and claims agents, from a variety of mediums.

"We want one-contact center experience for all our customers, regardless of where the call is routed from," Ward says. "This will require us to take a very comprehensive look at all our training materials. We need to identify gaps, analyze them, fill in the gaps and do some redesigning of these processes."

The group has determined that the entire call center process needs regular quality assurance reviews and customer feedback, which could also be handled over the Web.

### Step 2: Building Technical Infrastructure

The next hurdle SafeCo must face: building a comprehensive end-to-end system like Cisco's. Much of this work must be done by manually coding links from the Web-based customer service applications to the call center and back-end systems that store customer history.

SafeCo has begun by restructuring its architecture with currently available technologies:

■ **Computer/telephone integration** tools are being used to marry computer-

ER

AT SAFECO Property [illegible] Insurance, Jeffrey Ward [illegible] are helping [illegible] processes. They [illegible] 28 [illegible] that [illegible]

BRIAN SMALE

KATHLEEN MELYMUKA/MS. MIS

# Wanted: A workplace without a 'ceiling'

A FRIEND FORWARDED the following to me, allegedly excerpted from an article written in 1943 for male supervisors of women in the workforce during World War II.

*Tips on Getting More Efficiency Out of Women Employees:*

*Retain a physician to give each woman you hire a special physical examination. This reveals any female weaknesses which would make her mentally or physically unfit for the job.*

*Give the female employee a definite daylong schedule of duties so that she'll keep busy without bothering the management for instructions every few minutes. Women make excellent workers when they have their jobs cut out for them, but they lack initiative.*

*Young, married women usually have more of a sense of responsibility than their unmarried sisters [and] they're less likely to be flirtatious.*

*Older women have a hard time adapting themselves and are inclined to be cantankerous and fussy.*

*Husky girls are more even-tempered and efficient than their underweight sisters.*

*Give every girl an adequate number of rest periods during the day. You have to make some allowances for feminine psychology. A girl is more efficient if she can keep her hair tidied and apply fresh lipstick.*

It's always fun to chuckle at the bad old days, but before we get carried away over our postwar victories, answer this: What do Emerson Electric, Winn-Dixie Stores, Deere, Time-Warner and Nabisco Group Holdings have in common?

They're all Fortune 500 companies with 15 or more male corporate officers and not a single female in such a role. Not one. And there are many more companies on that list.

Now, for the good news: What do Alcoa, Charles Schwab, PECO Energy, Johnson & Johnson and Goodyear Tire & Rubber have in common? They're all Fortune 500 companies with female CIOs. There are also many more on that list.

These tidbits come to us from Catalyst (*www.catalystwomen.org*), a New York-based nonprofit research and advisory organization that works to advance women in business. Last spring, Catalyst quizzed the Fortune 500 about women's roles, and it recently released its "Census of Women Corporate Officers and Top Earners." The study shows that we have come a long way since Rosie the Riveter, but we have a long way to go.

For example, of the 500 largest U.S. companies, only four are led by female CEOs. Of 2,249 top corporate officers, 114, or 5.1%, are women.

These days when it's more difficult than ever to attract and retain talented IT people, even the most dunderheaded leadership knows it can't afford to exclude half the population from the employment pool. Why, then, do they continue to exclude half the population from upper management?

The notion that "our time will come, but just not yet" doesn't wash anymore. My generation, which left school in the '70s, has been working alongside men for more than 20 years. We're old enough to be over our flirtatious period and still young enough to have not yet reached the cantankerous and fussy stage (though this kind of news tends to push us in that direction). The point is, we're as qualified as the men our age who have these jobs.

KATHLEEN MELYMUKA IS A *Computerworld* features writer. Contact her at kathleen_melymuka@computerworld.com.

I'm not proposing a quota system for the corporate suite. There are plenty of good reasons why there might not happen to be a woman — or a man, for that matter — among corporate officers in companies that have only a handful of top executives, but common sense tells me you're not likely to toss a coin 15 times and get tails every time. Chance alone didn't dictate these corporate boys' clubs.

But women may get the last laugh. Christian & Timbers, a national IT search firm, recently reported that its 1999 placements of women in executive jobs were up 60% over 1998, largely as a result of placements in new e-companies, where recruitment depends more on talent and experience than outmoded stereotypes. It could be that women who hit the glass ceiling at traditional firms will end up leading the dot-com firms — and the economy — into the future.

Women in IT can push this improvement process along by voting with their feet. If I were a talented woman in technology being courted by several companies, I'd peek into the corporate penthouse and see if anyone up there looked like me. You can bet that would weigh heavily in my decision-making.

So, like the writer of the 1943 article, I have some advice for corporations spending gazillions on recruiting and retaining IT workers while keeping women in their place: Better start walking the talk, boys, or the girls may just start walking. ◗

*Continued from page 49*

## The Call Center

based systems to data received over phone lines and to present that information to a call center agent before he answers the phone.

■ **Interactive voice response** technology sends voice data from the phone to the back-office systems and helps route customers to the right representative.

■ **A desktop application** from Clarify Inc. integrates business-specific applications with customer information files.

"This gives us a base to build on," says Tammy Bare, SafeCo's contact center project manager. "In the future, we want to look into chat, voice over IP and other Web service models. But because of everything else we're introducing, we're looking at implementing such technology in the next 12 to 18 months."

SafeCo has two main reasons for building a Web-based customer service system. First, the company agrees with analysts' assessments that customers will soon demand Web-based services. And second, SafeCo sees automated routing of Web-based queries as ultimately more efficient.

"Right now, we're screen-scraping data off the Web and dropping it into an e-mail format, which goes into an e-mail box for which we promise a 24-hour response," Bare says. "The reps check the Web box between calls. But with the Clarify product we're introducing, some of the manual aspect of this will change. It will take these queries directly off the Web and put it into peoples' work queues."

### Step 3: Training

When SafeCo rolls out its Web customer service applications, the next step will be to address the cultural-change issues among call center staffers themselves — something Ward is already bracing for. "We're looking at pretty much everything — negotiation, customer management skills," he explains. "We know some of our call center staffers are very good technically, but they'll need to beef up their interpersonal skills, and vice versa."

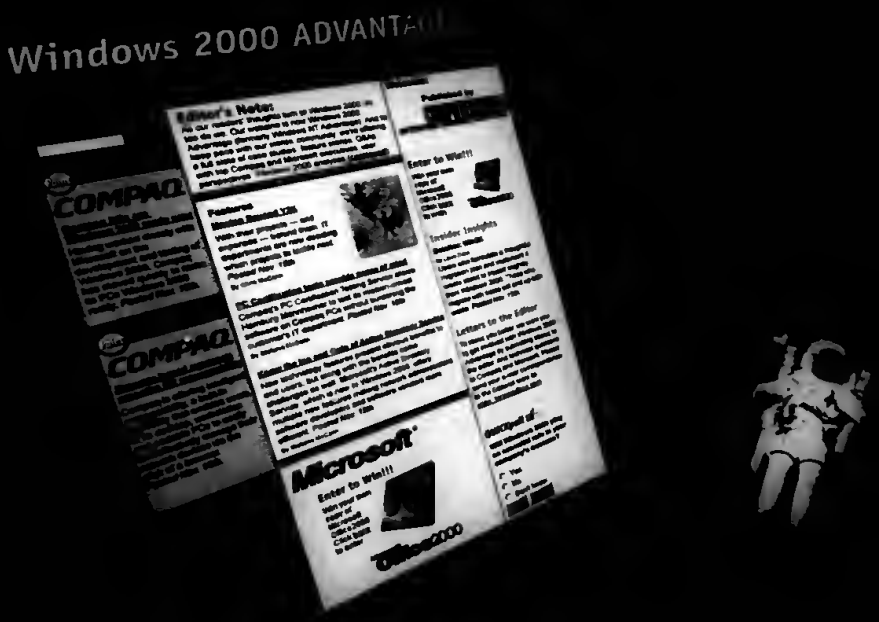
Several other cultural and training issues will also arise, Bultema adds. The call center will need to focus less on efficiency and more on the customer's experience. The application must be easy to use, with attractive options, and be strongly personalized, he says. And service agents must be able to close the loop so customers don't end up stranded somewhere in the system.

"Customer service agents and managers are threatened by all this technology, but it's really just an awkward transition," Bultema says. "They just have to prepare to interact in a different role."

At Cisco, the payoff is the customer's response when a call center agent answers the phone correctly, says Rhonda Lowe, a customer service associate.

"Whenever a customer uses this application for the first time and I answer the phone, 'Thank you for calling Cisco. How are you today, Mike?' they say, 'Wow! How do you know my name?' " she says with a chuckle. "Not only do we already have their name, we have their contact information and their question. It's a great 'wow' value." ◗

*Radcliff (DeRad@aol.com) is a freelance writer in Northern California.*



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# Balanced Scorecard

BY ROBIN ROBINSON

DEFINITION

**The Balanced Scorecard** model offers a way for a corporation to gain a wider perspective on its strategic decisions by considering the impact on finances, customers, internal processes and employee learning. The analysis takes into account financial and nonfinancial measures, short- and long-term goals, external goals, internal improvements, past outcomes and ongoing requirements as indications of future performance. IT departments are applying the model to help keep e-commerce, supply-chain management and other business-focused projects on track.

WHEN US West Inc. in Denver recently undertook an e-commerce initiative, the company put the Balanced Scorecard model to work, says Rod Mack, the company's general manager of software development. Based on the theory that for every action there's an equal and opposite reaction, the model helps companies determine what impact a potential change will have on the rest of the organization, looking at it from four perspectives: finance, customers, internal processes, and innovation and learning for employees.

"For our e-commerce initiative to be successful, it wasn't just the e-commerce platform," says Mack. Starting with that customer-facing goal, the Balanced Scorecard approach defined goals in other areas: internal processes, employee impact and finances, he says.

For US West's 4,500-person information technology department, that meant getting the associated computer systems Y2K-compliant in the internal processes category, implementing an IT career structure in the employee learning category and meeting overall budget commitments in the financial category.

## Business Beyond Finances

Some organizations like US West are beginning to accept Balanced Scorecard analysis for assessing roll outs of new technology. Instead of focusing solely on a company's financial goal, the model requires decision-makers to consider the impact of strategic decisions on staff, customers and the organization's function.

"In the past, a lot of these might have been the same goals, but it's easier to organize your thoughts around this. We even used Balanced Scorecard as the framework for all our 2000 planning," Mack says. The regional Bell operating company has been using Balanced Scorecard for the past year and a half to gauge successful project implementations, he says.

The Balanced Scorecard concept was created by Robert Kaplan and David Norton, who coined the term in a 1992 *Harvard Business Review* article (see "Balanced Scorecard's Origins"). Many Fortune 500 companies use it to assess the full impact of their corporate strategies, ferreting out any unintended consequences to their workforces, their customers or their bottom lines that could occur when they alter a production process, for example.

"When companies look at setting strategies and goals, they classically fall into setting financial objectives: increasing revenue or return on assets. But Balanced Scorecard says that's looking in the rearview mirror," says Ken Rau, director of the information risk management practice at KPMG Peat Marwick LLP. He uses the methodology to advise companies on how to avoid negative consequences when implementing strategies.

"Balanced Scorecard says companies need to be proactive. In addition to looking at the financial metrics, they should look at how they're serving customers, employees and internal processes," says Rau, who worked with Norton in the late 1980s. "You take each objective and ask, What are the specific initiatives to accomplish. What about the people, the processes, the customers and the financials? You figure out how to measure each of these areas. It's *not* what to do from one vantage point — the almighty dollar."

An IT department could use Balanced Scorecard to assess the impact of a corporate strategy to enter a new business line and to determine how IT could link itself to support the parent company's goal, Rau says. Or IT could use the model to track its own initiatives, such as how moving to a different hardware platform would affect the department's processes, budget, training requirements and the user groups it serves within the corporation.

"While an IS department can make significant improvements as a separate department, the IS department is really the foundation for the entire company's Balanced Scorecard effort," says Jim Brigman, co-founder and chief operating officer at Acorn Systems Inc. in Houston. Brigman received his master's degree from Harvard University under the tutelage of Kaplan.

I think it's a pretty powerful tool for setting the organization's goals.

ROD MACK, GENERAL MANAGER OF SOFTWARE DEVELOPMENT, US WEST

## Measurable Goals

Brigman says IT managers developing a Balanced Scorecard for their projects should take the following steps to develop measurable goals in each of the model's four areas of concern:

- **Internal processes:** Define the crucial capabilities and purposes of the IT department.
- **Finances:** Weigh the cost of an IT project against the benefits it will deliver and the operational impact it will have on the rest of the company.
- **Customers:** Consider the impact of IT projects on the user community and how any IT projects will influence users' opinions of IT's performance.
- **Employee innovation and learning:** Determine whether any planned projects will fill the need of IT employees for continual development.

"Any company implementing the Balanced Scorecard that has not made the IS department central to this task has missed the boat," Brigman says. "The IS department controls the company's data. They are the crucial group responsible for transforming data into information."

Instead of being a planning tool used only by executive management, the Balanced Scorecard model can clarify roles and expectations at all corporate levels, Mack says.

"From each executive director to each area manager, they can see how their specific goals tie to the entire organization's software management objectives," says Mack. "I think it's a pretty powerful tool for setting the organization's goals." ■

■ *Are there business terms you would like to learn about in QuickStudy? Please send your ideas to quickstudy@computerworld.com*

## Balanced Scorecard Origin

The originators of the Balanced Scorecard concept are Robert S. Kaplan and David Norton, co-authors of *The Balanced Scorecard: Translating Strategy Into Action* (Harvard Business School Press, 1996). They coined the term "Balanced Scorecard" in a 1992 article for the *Harvard Business Review*. The article, "The Balanced Scorecard: Measures that Drive Performance," is available at the Harvard Business School Publishing Web site at *www.hbsp.harvard.edu/home.html*.

The site also offers several Balanced Scorecard case studies by other authors, including Nicole Tempest's 1998 article, "Wells Fargo Online Financial Services," which reviews the bank's process for developing an online banking division.

Kaplan also wrote another book about the Balanced Scorecard methodology, *The Balanced Scorecard: You Can't Drive a Car Solely Relying on a Rearview Mirror* (Harvard Business School Press, 1996). – *Robin Robinson*

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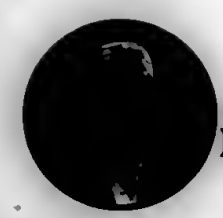

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JOE AUER/DRIVING THE DEAL

# Vendors' 'can't' may not mean 'no'

HOW OFTEN HAVE YOU heard a vendor's representative say, "I can't do that?" Most of the time *can't* means *I don't want to*. By saying "can't," the vendor's negotiator is trying to create the illusion that your demand is impossible — without explaining why. Many inexperienced customers fold their tents and move on to the next topic when "can't" is heard.

The following are some great examples where "can't" turned into "yes":

During one software negotiation, the vendor said, "I can't give you a 50% discount." But when pressed, the vendor admitted he didn't think his company had ever done it. After further negotiation, the customer got the discount.

During a lease negotiation, the lessor said, "I can't give away our right to require ownership tags on the equipment." (Normally lessors are pretty serious about having equipment easily identifiable by tags with their name and other pertinent information displayed.) But when the customer said, "The tags are OK with us, as long as we don't have to spend the time and resources to affix them for you," the vendor decided it was a burden for his company to place them on the equipment, too — so it dropped the whole issue.

The best tactic in battling "can't" is to immediately ask, "Why don't you want to?" That puts the vendor in the position of having to provide a logical basis for the assertion. Try to determine whether the vendor really can't for a valid reason (such as government regulation or law) or just doesn't want to. Either way, you reintroduce dialogue, which is what negotiations are all about, not rigid, deadlock-producing absolutes — like "can't." And if you counter this ploy when it's first used, the vendor usually won't try it again.

## Mail Bag

A lawyer for a lessor e-mailed me a lengthy, largely technical explanation of some lessor form contract provisions that I wrote about in my Oct. 11 column. The provisions concerned Y2K and cross-default issues. The lawyer identified himself as the author of the provisions.

Considering the shots I took at his work, his e-mail was pretty calm and straightforward — without a lot of pride of authorship in the provisions. The column and his complete defense can be read at *www.dobetterdeals.com/computerworld*, where you can also see his overbearing, all-the-risk-on-the-customer Y2K provision. Remarkably, the provision even tries to make the customer responsible for the equipment manufacturer's noncompliance.

But one point he made is a good one.

"I would be one of the first to admit eqnipment leases rarely attempt to pretend to be evenhanded," he wrote. "As for Y2K, I have asked for and received far more draconian Y2K provisions in other licensers. I believe the clause which offends you so much is a fair attempt to get to the point.

"As a general comment, the more dastardly problem when it comes to Y2K is the lack of desire to think 'win-win' and come up with a solution which solves the problem," he wrote. "Many times when people complain about the clause, I meet complete silence when I ask what type they would propose as an alternative that they can live with. Inevitably they sign it 'as-is,' rather than negotiate the clause and delve into where exactly they are with respect to year 2000."

JOE AUER is president of International Computer Negotiations Inc. (*www.dobetterdeals.com*), a Winter Park, Fla., consultancy that educates users on high-tech procurement. ICN sponsors CAUCUS: The Association of High-Tech Acquisition Professionals. Contact him at joue@dobetterdeals.com.

His points are well-taken. Since vendor forms aren't intended to be evenhanded, we need to negotiate changes to achieve a more equal-stake relationship.

I also fully agree about being prepared in negotiations to propose alternatives. You should have a list of prioritized negotiation objectives prepared by your team and agreed upon prior to a bargaining session, each with a rationale as to why it's important.

Suppliers, let's hear from you. We'll be happy to present your points if the e-mails are rational and printable — and if you're right. ▶

# BRIEFS

## Customer Consulting

Aris Corp., a consulting firm and software developer in Bellevue, Wash., has put together a consulting methodology for extending customer relationship management technologies and business practices to also cover a company's employees, investors, suppliers and distributors.

## Logistics Services

U.S. Home & Garden Inc. has selected Fritz Cos. to be the primary logistics service provider for its lawn and garden Web subsidiary, EGarden Inc.

Fritz Cos. will make shipping, warehousing and insurance services available for all products purchased and sold through EGarden's business-to-business online auction and wholesale-store Web sites.

Both companies are based in San Francisco.

## Electronic Bill Payment

First Union Corp. in Charlotte, N.C., will offer turnkey electronic bill presentment and payment capabilities to small and midsize businesses, using software and services from Derivion, an Atlanta-based application service provider.

First Union will offer Derivion's InetBillerSM service offering as part of its participation in Spectrum, a partnership the bank formed with The Chase Manhattan Corp. in New York and Wells Fargo & Co. in San Francisco.

## Implementation Project

City Utilities in Springfield, Mo., will implement software from San Francisco-based SPL WorldGroup Industry Solutions Inc. The project includes both software and implementation services.

## Software Updates

Interwoven Inc., a Sunnyvale, Calif.-based maker of content-management software, has selected Intraware Inc.'s Web-based SubscribeNet service to provide its customers with software updates and product information. Intraware is based in Orinda, Calif.

## Servicesoft Merger

Servicesoft Technologies Inc., an Internet customer service software maker in Needham, Mass., has announced a merger with Internet Business Advantages Inc., an electronic-services consulting firm in Concord, Mass.

## Schneider Teams With iMark.com

Schneider Logistics, a wholly owned subsidiary of Schneider National Inc., a truckload transportation and logistics company in Green Bay, Wis., has teamed with iMark.com, an Austin, Texas-based global marketplace for buying and selling used equipment online. The alliance will allow iMark.com's community of used manufacturing equipment buyers and sellers to use Schneider's business-to-business e-commerce logistics server.

## Hertz Boosts Customer Service

The Hertz Corp. has rolled out two new customer service technologies at U.S. airports.

A new version of Hertz's Gold Electronic Manifest system – a nonverbal, electronic, wireless technology – immediately transmits the names of arriving customers to shuttle drivers. The Flight Arrival Notification System, a satellite-based flight arrival information system, allows Park Ridge, N.J.-based Hertz to prepare customers' cars in conjunction with flight delays and cancellations.

If you develop or implement mobile computing technology, don't miss this event!

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# TECHNOLOGY



## WIRELESS PORTAL

IBM has signed an agreement to develop a wireless portal for Vodafone AirTouch. Analysts say IBM is now well positioned to grab a part of the fast-growing wireless Web. But corporate use is still far off. ▸ 58

## ISP JUGGLING

Juggling Internet service provider accounts for 100 world-traveling employees is frustrating, but its better than paying long-distance charges for dial-up calls in faraway hotels. Better still: Start-up iPass promises to manage exotic Internet access for you. See Emerging Companies. ▸ 64

## HP'S NEW TOOL

A tool designed to be a one-stop system for securing Windows NT Web servers was among those recently introduced by Hewlett-Packard. The HP Praesidium WebEnforcer for Windows NT eliminates security vulnerabilities automatically. ▸ 59

## VALIDATION SERVICES

RSA Security is teaming with VeriSign to provide application developers and e-commerce service providers in the emerging wireless world the same sort of trust and validation services it offers in other areas. ▸ 59

## HANDS ON

*Computerworld* reviews two digital video recorders and a backup device for notebooks. The latter turns out to be straightforward and very useful. You simply insert a card into your PC. The video recorders, on the other hand, cost a lot and are difficult to hook up. ▸ 61

## BIDDING TO HELP YOU

A new Web support site allows service providers to bid to help you. Even better, it's free — at least for now. NoWonder.com works like this: A user with a computer problem can go to the site and search its online knowledge databases, e-mail a problem to a site and receive an answer — usually within an hour. ▸ 58

## MAINFRAME SKILLS

IT pros with primarily mainframe skills face a mixed future. Some companies claim they can't find mainframe professionals and are desperate for them. But at the same time, no one is adopting mainframes for the first time, and many companies are moving away from them. One expert predicts a slowdown in that hiring market. See Skills Scope. ▸ 66

## QUICKSTUDY

Wireless Markup Language was designed to describe content and format for presenting data on limited-bandwidth devices, such as cell phones and pagers. WML provides a tool to make Web pages accessible from handheld, wireless devices. ▸ 62

# MAINFRAME MERGER

**IN A MOVE WELCOMED BY ITS OS/390 USERS,** Tivoli Systems last week announced that parent company IBM will buy object-oriented management software maker Accessible Software in Whippany, N.J., and integrate its Access 1 management tool into the Tivoli Management Environment. Mainframe customers hope it will make it easier to get a single view of applications, but details on development plans are scarce.

58

# Some Mainframe Users See Hope in Tivoli Deal

*Purchase of Accessible Software may ease management of mainframe, distributed apps*

BY SAMI LAIS

IN A MOVE welcomed by its OS/390 users, Tivoli Systems Inc. last week announced that parent company IBM will buy object-oriented management software maker Accessible Software Inc. in Whippany, N.J. Tivoli plans to integrate Accessible's Access 1 management tool into the Tivoli Management Environment (TME).

When Austin, Texas-based Tivoli brought TME, its management framework, to the OS/390 platform last year, it "was lacking a product that would integrate distributed and mainframe systems and present them together in one view. By acquiring Access, they got that capability," said Arun Kant, senior vice president of information systems at The Prudential Insurance Company of America in Roseland, N.J.

But users like Dave Ward, vice president of enterprise systems at First Union Corp. in Charlotte, N.C., said they have unanswered questions. "Will there be a common repository, and are they going to collapse it into what kind of schema or tree structure?" said Ward. "I don't want to end up with a lot of different inventory systems — I already have that."

Ward also said he questions which console will be used in the future. "Right now, I've got an Access 1 console, a tech console and [Tivoli TME's Global Enterprise Manager environment (GEM)] console," he said. "My questioo is: When the music stops, which one is going to be your enterprise access console? [Tivoli representatives] told me it's going to be GEM. But I don't know that I believe that. I think they might take the Access 1 console and relabel it."

That would make sense, said Patrick Dryden, an analyst at Giga Information Group Inc. in Dallas. "GEM lays over Tivoli and is supposed to integrate everything, but no one's ever gotten [it] to work right," said Dryden.

Prudential's Kant also said he isn't a fan of GEM. But "using Access makes GEM redundant," he said.

## Promise of More to Come

Neither Bob Yellin, senior vice president and general manager of the Enterprise Business Unit at Tivoli, nor Accessible President Jim Tagliareni would discuss development plans beyond vowing to put significant resources behind development and promising to make a security-related announcement later this year.

Kant said users will likely benefit from the acquisition in both the short term and the long term.

"We wanted to get one view of our environment to get the business view, the business impact of a problem, and the only way to get it was Access," Kant said.

Access runs on Windows NT and uses a Microsoft Corp. SQL database. Events from the mainframe, network and distributed systems flow to the Access console, Kant said. "We're even using it to mooitor our telecommunications — GeoTel and Lucent switches."

All Access products — including mainframe, open systems and storage-area network management software, will be integrated into Tivoli tools. They will also continue to be sold and developed as standalone products, Kant said.

IBM declined to disclose financial details of the deal. ▶

FIRST UNION'S DAVE WARD says there are pluses in IBM's acquisition of Accessible Software, but he says he has questions about Tivoli's repository and console strategy

# Site Lets Service Vendors Bid to Help You

*NoWonder.com lets you check the ratings of bidders; and all help is free — for now*

BY SAMI LAIS

Cross eBay with a free computer support Web site, throw in a diagnostic probe and reporting tool, and what you'd get would look a lot like *NoWonder.com*.

NoWonder Inc. announced earlier this month that it has collected $40 million from investors such as eBay Inc. and CNet Inc. to expand services such as its new remote access capabilities for support.

EBay founder Pierre Omidyar will sit on NoWonder's board of directors, said an eBay spokesman.

NoWonder's service works like this: Users with computer problems go to *NoWonder.com* and either search its online knowledge bases, e-mail questions to the site or request live interactive support. Volunteer support technicians usually answer e-mail queries within an hour. NoWonder added the live support option Jan. 12.

For now, all services are free. But later this quarter, users will have to pay for live help, with support technicians competing with one another by submitting bids to customers. But not all technicians will charge for their services, a NoWonder spokeswoman said. "There are people in the Internet community who do this just for fun," she said.

The site shares other similarities with eBay besides the auction model. Users will be able to check ratings of bidders, and NoWonder will charge a fee for every bid transaction, with support providers paying the freight. E-mail support and access to the knowledge bases will remaio free, the spokeswoman said.

## A Cool Idea

"This is such a cool idea. I don't know why no one has done it before," said analyst Michael Dortch at the Robert Frances Group in Westport, Conn.

The new model sprang from the June merger of NoWonder and Full Circle Software Inc., both in Sunnyvale, Calif.

Enterprise software maker Full Circle bought the user community site, taking on the NoWonder name and redesigning its business model, the spokeswoman said.

Full Circle contributed its TalkBack diagnostic and reporting tool. The tool has been embedded in software such as Netscape Communicator and Windows 2000 and resides on nearly 30 million computers worldwide, a company spokesman said.

TalkBack collects such low-level data as stack dumps, which are repositories of error information collected when an application fails, he said.

Jon-Eric Eaton, an information technology technician at Tyler Business Services Inc. in Washington, said he tried *NoWonder.com* when a backup server for Tyler's accounting department failed to recognize the domain name server.

His e-mail describing the problem was answered within the hour with suggestions and requests for more information, he said. But after sending a second e-mail, he searched the site himself for information about TCP/IP problems. "One message said, 'No one ever mentions this, but you have to have TCP/IP and networking files from tbe same release,'" he said.

A clean install using drivers and Winsock2 patches downloaded from a site linked to *NoWonder.com* fixed the problems, Eaton said.

Letting support staff, with user permission, take control of a remote machine could be useful, he said. But live help via instant messaging would be even better, he said.

"When you call in for help, they tell you what to do, and that changes everything, even if it doesn't fix the problem," he said. "So you call back, and they say, 'Now, you're case number what?' This would solve that problem." ▶

# RSA Security Hopes to Move Digital Certificates Online

*Will also build products based on new protocols*

BY ANN HARRISON

Digital certificates have long been used to secure transactions over wired networks. Now RSA Security Inc. is teaming with VeriSign Inc. to provide the same sort of trust and validation services in the emerging wireless world.

In an announcement last week at the RSA Conference 2000 in San Jose, Bedford, Mass.-based RSA said it would work with VeriSign, a Mountain View, Calif.-based provider of digital certificate technology, to build products based on RSA's upcoming BSafe Secure Sockets Layer-C and BSafe Transport Layer Security (TLS) protocols.

Software components built with those tools will be compatible with VeriSign's wireless trust services and will incorporate VeriSign's digital certificate root keys. RSA plans to support VeriSign's Personal Trust Agent technology in the protocols.

RSA will also support VeriSign's TLS certificates to address the need for validation and revocation of certificates over wireless connections.

RSA is offering VeriSign developers and service providers free software development kits designed to be used with VeriSign's free Wireless Application Protocol (WAP) server digital certificates and wireless trust offerings.

"For wireless e-commerce to succeed, application developers and service providers must deliver at least the same degree of trust and security which people have come to expect from the wired Internet world," said Stratton Sclavos, president and CEO of VeriSign, in a statement.

RSA Security and VeriSign are members of the WAP Forum, an industry group that is developing standards for wireless information and telephony services for digital mobile phones and wireless terminals.

Eric Hemmendinger, an analyst at Aberdeen Group Inc. in Boston, said that the RSA and VeriSign announcement was just one in a series of similar product positionings at the RSA 2000 conference.

Other companies, including U.K.-based Baltimore Technologies PLC, Needham Heights, Mass.-based Cybertrust (which Baltimore Technologies plans to acquire) and Entrust Technologies Inc. in Plano, Texas, are also entering the wireless market, he said.

"These are not announcements of products that enterprises will buy right now but positioning announcements for players in a market that will evolve over the next two or three years," said Hemmendinger.

He added that although wireless technology is already available to allow cellular phones to be used as client or authentication devices, mass-market acceptance of these products is still two or three years off.

RSA also announced two new security protocol components for wireless and embedded applications.

# IBM Makes Wireless Deal

BY MATT HAMBLEN AND DOMINIQUE DECKMYN

IBM will design, build and run a global wireless Internet portal for Vodafone AirTouch PLC, the world's largest mobile phone operator, the companies announced earlier this month.

The portal, which will be launched in July in Europe, North America and Australia, is based on software from the Sun-Netscape Alliance and InfoSpace.com Inc. It will give users of mobile phone and handheld devices from Nokia Corp., Ericsson Inc. and Palm Computing Inc. access to messaging and calendaring functions, in addition to travel information and financial services.

"All the carriers are going to need some help" moving into wireless data, said Ken Dulaney, an analyst at Gartner Group Inc. in Stamford, Conn. "There's only a couple of companies that can do this kind of project." IBM is now well-positioned to win other wireless Web deals from telecommunications companies and large corporations, he said.

Several divisions at IBM are working with U.K.-based Vodafone on the project, including the 200-member pervasive computing unit.

IBM also announced a strategic relationship with Schaumburg, Ill.-based Motorola Inc. for developing wireless Web access from automobiles. On Dec. 1, IBM joined forces with Sprint PCS Group in Kansas City, Mo., to develop and test wireless business applications and services for the mobile workforce.

IBM expects that by 2003, wireless devices will outnumber PCs on the Internet.

# HP Offers New NT Security Tools

*One monitors threats in the NT environment*

BY ANN HARRISON

A tool designed to be a single means of securing Windows NT Web servers was among those recently introduced by Hewlett-Packard Co. at the RSA 2000 security conference in San Jose.

The HP Praesidium WebEnforcer for NT automatically eliminates known security vulnerabilities, implements best practices for security, monitors security settings and enforces those settings when changes are detected, the company said.

The company is also offering the HP SecurityUpdate subscription service, which updates information technology professionals and security contractors on new vulnerabilities.

Dennis Szerszen, director of security strategies at Hurwitz Group Inc., a Framingham, Mass.-based consulting firm, says HP is breaking new ground with a comprehensive product that could reduce the cost of buying and integrating individual security tools.

"Because all key components of the environment, including operating system, Web server and transaction server, are protected with a single integrated security solution, there is no need for IT administrators to buy and integrate a collection of point products," Szerszen said.

When threats or potential vulnerabilities are detected, WebEnforcer disables system services and subsystems that could open security holes.

It also secures Distributed Component Object Model permissions and remote registry access, secures hundreds of registry settings, assigns appropriate user rights and secures files, folders and other vulnerabilities intruders could exploit.

HP Praesidium WebEnforcer for NT is available for $2,995 per server. The HP SecurityUpdate subscription service, which includes technical support, is priced at $695 per year.

HP also introduced HP DomainGuard Enterprise 1.0, a Web access control tool designed to address security management for extranet portals.

The Web authorization manager provides centralized, role-based access control and single sign-on for all Web objects on multiple Microsoft Corp. Internet Information Server/NT Web servers.

HP said the product reduces development and deployment costs by eliminating the need to build security into each Web application. Pricing depends on configuration.

## HP Announces NT Security Products

- **Praesidium WebEnforcer for NT** secures NT Web servers, automatically eliminates known security vulnerabilities and enforces security settings when changes are detected.
- **DomainGuard Enterprise 1.0** Web authorization manager provides centralized, role-based access control and single sign-on for all Web objects on multiple Microsoft IIS/NT Web servers.

CeBIT Corporate Lectures

»Integration of Access 2000 and SQL Server 7.0«
Thursday, Feb 24, 2000, 2.00 pm

»Dot.com your IT Architecture – The Application is the infrastructure«
Sunday, Feb 27, 2000, 11.15 am

»How Oracle software powers the internet and Sun dot.com's your company«
Monday, Feb 28, 2000, 4.30 pm

All about the CeBIT Lectures under...
http://cl.cebit.de

# BRIEFS

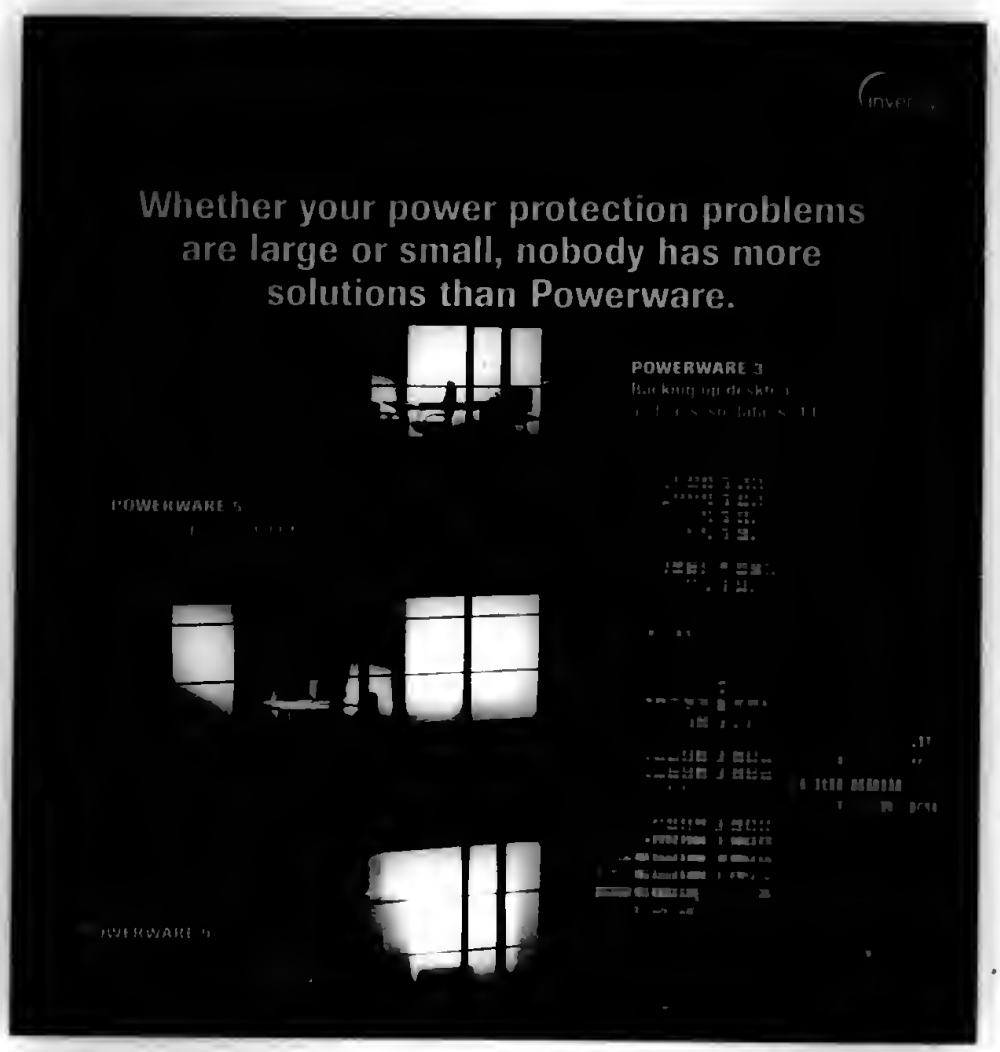
## PeopleSoft Upgrade

PeopleSoft Inc. in Pleasanton, Calif., has released an upgrade of its business analysis software with new support for accessing the applications from Web browsers. New applications are also being added for analyzing human resources data and for monitoring corporate performance using so-called Balanced Scorecard techniques. (To learn more about the Balanced Scorecard model, see Business QuickStudy, page 52.) PeopleSoft also released an Internet-enabled version of its development tools. Pricing wasn't disclosed.

## Compaq Cuts Prices On Notebook PC Line

Compaq Computer Corp. has cut prices by up to 20% on its Armada commercial notebook PC line. The Houston-based firm also reduced prices by as much as 8% on some models of its Deskpro Workstation and Professional Workstation products.

Officials said the price cuts Compaq is passing on to its enterprise customers are a result of competitive pricing and cost savings.

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## Microsoft Joins Bluetooth Group

Microsoft Corp. and three other large companies have joined the Bluetooth Special Interest Group, more than a year after the organization was founded. Bluetooth is a set of protocols for wireless communications over short distances among devices such as handheld computers, laptops, PCs and mobile phones.

All told, there are about 1,200 companies in the Bluetooth group. Microsoft, 3Com Corp., Lucent Technologies Inc. and Motorola Inc. joined the organization as part of the "promoter group," which already includes Ericsson Inc., IBM, Intel Corp., Nokia Corp. and Toshiba Corp.

## Business-to-Business Tools Announced

TSI International Software Ltd. in Wilton, Conn., announced several business-to-business integration tools, including an e-commerce broker and software that can tie existing corporate systems to the Web. Pricing for TSI's full Mercator E-Business Broker suite starts at $400,000.

TSI, one of the many vendors jockeying for a position in the application integration market, also said it's changing its name to Mercator Software Inc.

## App Hosting Service To Be Launched

Irving, Texas-based i2 Technologies Inc. said it plans to launch an Internet-based application hosting service for retailers and consumer packaged goods companies by the end of March.

The hosted applications will be part of i2's TradeMatrix online exchange and support functions, which include demand forecasting and business collaboration tools. The company also said it's working with Los Angeles-based Fasturn Inc. to set up an online marketplace for apparel and textile businesses.

# Easy Backup, but Difficult Digital Video

BY RUSSELL KAY

IN TODAY'S GRAB BAG of products, I look at two very different items. One, a backup device for notebooks, is so straightforward and useful that it should be an instant hit, especially for people who are always on the road. You plug it in and the backup process literally starts itself. The other — a digital video recorder — sounds good in theory but was fiendishly hard to get hooked up and working.

## Laptop Backups

Back up your data. Everybody needs to do it, but hardly anyone actually does. That's why information technology managers love server-based data and applications: They know data has been backed up regularly and properly.

Nonetheless, lots of users still need to do their own backup, especially laptop users. For them, Costa Mesa, Calif.-based CMS Peripherals Inc. has the niftiest new product I've seen. It's called Automatic Backup System, and it accomplishes its job in a stunningly simple way.

Basically, the unit is a 6-oz., laptop-size hard disk (available in sizes ranging from 4GB to 18GB) with a permanently attached PC card that clips onto the disk drive and out of the way when not in use. To do a backup, you unclip the PC card and insert it into your laptop's PC card slot. That's all — end of story. The backup software for Windows 95, 98 and NT is already installed, and the process starts by itself.

You can customize what's backed up and what's excluded. The $389 4.3GB unit I tried was fast, simple and foolproof. It took about 15 minutes to back up nearly a full gigabyte of files, and I didn't have to do a thing. I see this product as a potential blockbuster hit, especially among financial and auditing professionals who are constantly on the road.

CMS's Automatic Backup System is the ultimate in plug and play

## The Video Computer Arrives

These new gadgets don't even have a standardized label to describe them. For now, I'll use the term digital video recorder (DVR). They record television programs like a VCR but onto a computer hard drive instead of magnetic tape. Their aim is to make television viewing more convenient than ever.

When I first heard about them, I wondered just how well they would work in practice. The computer industry expects users to just put up with innumerable crashes, conflicts, inconsistencies and annoyances. Television, however, seems to expect little or no patience or intelligence from its viewers. That question is the main reason *Computerworld* is interested in these consumer-grade units. IT managers should keep an eye out for such new and unpredicted uses of computer technology because such devices may suddenly come into use within the enterprise — and guess who's going to be asked for help when there are problems. To get an idea of what happens when two disparate technologies collide, I tried out the first two DVRs on the market: Replay TV from Mountain View, Calif.-based Replay Networks Inc. (*www.replaytv.com*) and TiVo from Sunnyvale, Calif.-based TiVo Inc. (*www.tivo.com*).

Let's ask the really important question: Why spend $700 for one of these boxes? For one thing, you can pause a live broadcast. If the doorbell rings or someone needs to talk right now, just hit the pause button on the remote and turn your attention to where it's needed. Later, press play and it picks up right where you left off.

Also, during playback you can press Replay's Quick Skip or TiVo's Jump button and advance instantly in the recording, which allows you to skip over virtually all commercials.

These DVRs have intelligent-search capabilities. Each one periodically dials into a central server and uploads a detailed, customizable program guide. You can program "theme channels" identified by keywords or phrases, and the system will automatically record programs with that title or theme no matter what channel they're on or what time they air.

The system isn't foolproof, though. My Replay unit attempted to record an HBO movie, even though I'm not an HBO subscriber. Also, I wanted to capture shows about woodworking, but when I programmed the word *wood*, the system recorded movies with an actor of that name. Still, my wife really appreciated the Mel Gibson channel.

Hard-disk capacity is finite; recording in its lowest-quality mode, Replay TV can hold about 20 hours of video (half that at better quality). TiVo can record about 14 hours of video at low quality (four at the best viewing level). However, each company offers models with larger disks (up to 30 hours) at extra cost. To save something long-term, you're expected to archive it onto videotape.

Apart from cost, the real problem with these machines is a hookup nightmare — the worst "out-of-the-box experience" I've ever endured.

## Confusing Cables

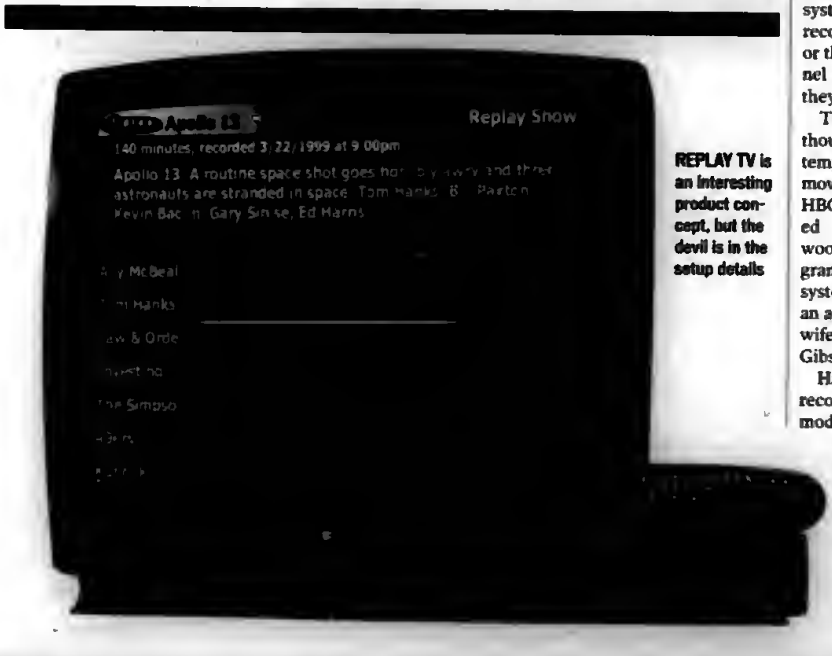
There's an intimidating collection of cables, and making all the right connections isn't easy. I've had 30 years' experience wiring audio component systems, computers and even studio-recording consoles, but despite the very clear diagrams each vendor supplied, I still managed to connect things wrong the first time on each DVR. They presented me not with the expected menus but with blank blue screens — final proof, perhaps, that these machines really are computers.

Neither of these products runs the Windows operating system, but each had crashes that forced manual reboots, which required unplugging their power cords.

Replay's receiver, which is made by Matsushita Electric Industrial Co., required several reboots in two weeks. And TiVo's box, from Philips Electronics NV, initially wouldn't show the programs it indicated and then stopped responding to the remote.

All these problems are fixable, but many users won't put up with the hassle. The DVR is a really intriguing product that's nowhere near ready for prime time, either in user-friendliness or pricing. I'd recommend having an experienced professional hook up the system. You can do it yourself, but you may regret it.

Replay TV costs $699; TiVo costs $499.




REPLAY TV is an interesting product concept, but the devil is in the setup details

# Wireless Markup Language

BY JAIKUMAR VIJAYAN

DEFINITION

**Wireless Markup Language** is like the Internet programming language HTML. It delivers Internet content to small wireless devices, such as browser-equipped cellular phones and personal digital assistants, which typically have very small displays, slow CPUs, limited memory capacity, low bandwidth and restricted user-input capabilities.

WIRELESS Markup Language (WML) was designed to describe content and format for presenting data on limited-bandwidth devices such as cellular phones and pagers. In essence, WML, which is based on the content-tagging language XML, provides a tool to make Web pages accessible from handheld, wireless devices.

## What it Does

Rather than attempting to deliver the same Web page content you would see on a PC's Web browser, WML strips away much of the extra information found on pages coded with the Internet programming language HTML — especially graphics and animation. It presents mainly text-based information in a manner that's optimized and easily accessible for users of mobile devices, according to Roger Snyder, a senior product manager at Phone.com Inc. in Redwood City, Calif., one of the technology's leading proponents.

WML can be used in wireless devices to update electronic schedules, check inventory information from corporate intranets or present time-sensitive, discrete pieces of data such as stock quotes, weather reports, e-mail or calendar and appointment data.

Apart from helping developers present Web data in a better fashion, WML lets them optimize it for the slower connections of wireless devices. For instance, WML lets cellular phone users map frequently used Internet functions like looking up stock information to specific keys in the same manner that users can store frequently used telephone numbers.

Similarly, WML is telecommunications-aware and lets users do things such as switch between making calls and getting Internet information relatively easily, Snyder says.

Fueling a lot of the interest in technologies like these is the projected growth of wireless phone use, says Ken Hyers, an analyst at Cahners In-Stat Group in Newton, Mass.

"You are going to have 1 billion wireless phone users in 2002, while wireless penetration in the U.S will exceed 50% of the population . . . it's a huge market," Hyers says.

The opportunity for vendors lies in making the Internet easier to access and interact with for such users, Hyers says.

## Limited Bandwidth

"Given that we don't have much by way of [wireless] bandwidth today, we need some sort of a protocol that is very lightweight and suitable for moving information" from the Web to wireless devices, says Craig Mathias, an analyst at The Farpoint Group, a consultancy in Ashland, Mass.

WML's roots lie in efforts by Ericsson Inc. in Research Triangle Park, N.C.; Nokia Corp. in Irving, Texas; Motorola Inc. in Schaumburg, Ill.; and Phone.com to define a standard, widely accepted protocol for wireless communication with the Web.

These companies were responsible for defining Wireless Application Protocol (WAP), a set of rules for developing wireless Web applications [Technology QuickStudy, Nov. 1]. The companies decided to base WAP on Phone.com's Handheld Devices Markup Language (HDML) communications protocol. WML has since evolved from HDML.

The WAP *(www.wapforum.org)* Forum has grown to include more than 200 members, representing 95% of the global handheld market.

## How It Works

Because WML was designed for devices with small displays, its user interface is quite different from typical HTML pages. WML includes the following major functions:

- **Text and image support:** For formatting and layout commands.
- **Deck/card organizational metaphor:** Information in WML is organized into a collection of cards and decks. Cards specify one or more units of interaction (a menu, a screen of text or a text-entry field). Cards are grouped into decks. A WML deck is similar to an HTML page in that it's identified by a Web address and is the unit of content transmission.
- **Support for explicitly managing the navigation between cards and decks:** WML includes provisions for event handling, which may be used for navigation or executing scripts.

Rather than navigating through typical Web pages by clicking on links, users interact with the cards, moving forward or back through the deck. Another important difference is that while a single HTML page can contain multiple functions such as links and user-input capabilities, each WML card contains just one function. Each time a user presses a key, he moves to the next card in the deck.

## Extra Work

If a Web site is to be accessible by WAP-enabled wireless devices, the site developers need to add an alternate version of each page, written in WML. The WML code specifies what data will be available to wireless devices.

While this process involves additional coding, Snyder says it's relatively painless. Most scripts and query tools used for retrieving and presenting data on HTML pages can be easily modified for use in a WML environment, he adds.

The real issue, though, is whether such a protocol will be needed in the long term, Mathias says.

Already, companies such as AvantGo Inc. in San Mateo, Calif., and ProxiNet Inc. in Emeryville, Calif., offer ways to mold standard HTML pages into formats suitable for wireless devices without requiring the creation of separate pages, says Jill House, an analyst at International Data Corp. in Framingham, Mass.

The continuing move to XML standards should make it easier to format Web pages for different devices, she says.

But for now, WML makes sense, especially "from the standpoint of optimizing [Web content]" for wireless phones, House says.

## Browsing on a Bandwidth Budget

*Because of the severe communications and display limitations of handheld devices like smart phones and palmtop PCs, Internet access has to take a somewhat different tack to be even feasible, much less successful. Here's how WML contributes to that process:*

A normal Web page with lots of content and color graphics takes a lot of bandwidth to transmit quickly and requires very good display capabilities on the receiving browser.

What generates that big Web page is an HTML program that specifies all the elements, where and how they're displayed and what graphics are included.

When we use that large HTML page as the basis for a WML page, eliminating most of the graphics and color and including only necessary information, fewer bytes of data are transmitted. This process of paring down a Web page is sometimes called Web clipping.

You may have only a few lines of display, but with a well-designed WML card deck, that's enough to get stock quotes, airline information, buy a book, get a weather report or perform many other functions.

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# IBM SEEKS TO BOOST PC SERVERS

## Future chip set aims to bring hot-swappable CPUs, memory, clustering and a faster bus to IA-64-based servers.

By David Orenstein

IBM hopes to turn Windows 2000 servers into minimainframes, using a chip set that incorporates Intel Corp.'s upcoming 64-bit processor architecture. IBM claims its chip set, code-named Summit, will put mainframe capabilities on the Windows 2000 platform, helping IBM to differentiate its offerings from competitors' and elevate its products out of the low-end commodity market.

According to Tom Bradicich, director of server architecture at IBM, the Summit design would transfer IBM mainframe features such as hot-swappable CPUs and memory, software partitioning, clustering and a bus speed of 133 MHz to servers running Microsoft Corp.'s Windows 2000 on Intel's forthcoming 64-bit chip architecture.

### Switching Buses

The chip set would also support technology from a new standards group, called Infiniband, that will replace the shared bus in PCs with a less-congested switching architecture (see "New Server Bus Effort Debuts").

Shared-bus architectures carry data at the same time over the same pathways. Switching gives each component on the bus a turn to use the full bandwidth of the bus, rather than forcing all components to share the bandwidth.

Because Intel has delayed the IA-64's arrival until next year, both IBM and customers will have to wait until late next year to see if the plan works.

While 2001 seems far off in the future, at least one of IBM's target customers is already interested in the Summit chip set. Joseph Cirra, assistant vice president of MIS at Mellon Financial Corp. in Pittsburgh, says IBM's plans to beef up PC servers are in line with the banking and investment company's long-term information technology goals.

Because Windows 2000 is expected to be more scalable and reliable than its Windows NT 4.0 predecessor, many users are looking to the new operating system to help consolidate hardware. More reliable hardware could help this process. Mellon is looking to Windows 2000 to allow the consolidation of hundreds of file and print and departmental data servers into scores of machines that can support more than 1,000 users each.

### No Tolerance for Downtime

Cirra, who heard a presentation on IBM's plans in December, says the company needs more mainframelike availability from even its low-end servers. Hot-swappable components and another promised IBM technology — "software rejuvenation," which would predict upcoming server failures — are key to high availability, says Cirra. Software rejuvenation monitors software performance and memory usage in an effort to identify potential memory leaks and other problems that can take a server down.

"Server uptime is a metric we base our performance on," Cirra says. "We don't have the leeway of downtime anymore."

In the near term, Cirra says, Melloo plans to use IBM's Cornhusker clustering extensions to Microsoft's clustering services to expand Windows 2000 Advanced Server beyond two nodes and Windows 2000 DataCeoter beyond the four nodes supported out of the box by Microsoft. Cornhusker initially will offer eight-node clustering and will be available in the second quarter of this year, according to IBM.

IBM's Summit is one of several product announcements users can expect PC server vendors to make over the next year, says analyst Joe Greuner at Aberdeen Group Inc. in Boston. Vendors are trying to differentiate their Intel-based products and at the same time create new high-end markets for traditionally low-end machines.

"They still have a way to go," Greuner says. "The [vendors] are trying to help Intel in that process."

### Big Blue Chips

*IBM says its Intel-based server chip set will support reliability- and performance-enhancing technologies.*

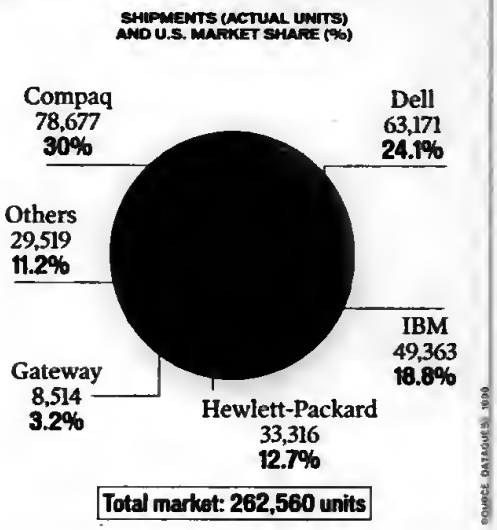
**PROCESSORS WOULD BE HOT-SWAPPABLE,** meaning they can be added or removed without requiring the computer to be shut down or rebooted. Operating systems and applications could be partitioned among processors, and processors could be clustered to handle tasks together.

**MEMORY WOULD ALSO BE HOT-SWAPPABLE** and able to recover from failures of up to 8 bits rather than 1 bit, which is what's possible today.

**I/O WOULD BECOME FASTER** with support for a new Peripheral Component Interconnect (PCI) bus speed of 133 MHz instead of the current 66 MHz. PCI cards could be added to remote slots and still perform as if they were in the machine. The chip set would also support technology from a new standards group called Infiniband, which will replace the shared bus in PCs with a less congested switching architecture.

SOURCE: IDC

### Top Five U.S. PC Server Vendors




SOURCE: DATAQUEST, 1999

### New Server Bus Effort Debuts

IBM isn't the only server vendor hoping that innovations in its I/O systems will help it grab market leadership and users' attention. The future of I/O architectures was the topic of Strategic Research Corp.'s Server I/O 2000 Conference in Monterey, Calif., last week.

The conference marked the debut of the Infiniband Trade Association, which formed last August when the competing Future I/O and Next Generation I/O groups merged. The new group, led by Compaq Computer Corp., Dell Computer Corp., Hewlett-Packard Co., IBM, Intel, Microsoft and Sun Microsystems Inc., is working to develop an I/O architecture that uses switching rather than a shared bus to relieve congestion in the bus and thereby improve performance.

Support for Infiniband is an important part of IBM's new chip set design for its Intel-based servers. Initial products based on Infiniband aren't expected until next year.

– *David Orenstein*

# Let Their Fingers Do the Walking

*Start-up iPass handles remote Internet access accounts so you don't have to*

BY AMY HELEN JOHNSON

THE BUSINESS proposition of iPass Alliance Inc. — supplying global network access services — can be summed up in one simple math problem: What's the difference between the cost of a local phone call and the cost of a long-distance call to New York from, say, Ouagadougou, the capital of Burkina Faso?

Ask this question of the typical information technology manager charged with providing remote access to the corporate network for a far-ranging workforce and, without even consulting a phone bill, he's likely to groan and tell you it's a lot. And the cost of maintaining modem banks, toll-free numbers and other dial-in technology adds a whole lot more.

These days, the typical IT manager relies on remote access over the Internet to reduce communication costs. That works well, as long as the corporate Internet service provider has points-of-presence in all the places remote users need to be. If it doesn't, the manager will soon find himself developing and maintaining relationships with multiple service providers.

Enter Mountain View, Calif.-based iPass, which presents itself as a supplier of global roaming services. The company has a worldwide network of Internet service partners that provide local access services to iPass customers without requiring users to sign up for accounts. iPass handles the billing chores.

Convenience, reliability and access attracted Detroit-based law firm Dickinson Wright PLLC to iPass. "With one phone call, we can come in and replicate all our Notes databases, pick up and send e-mail [and] check documents in and out of our library," says CIO Michael Harnish. "And we can do all that on a secured, authenticated basis plus access the Web with a single local phone call."

Harnish says he also likes iPass' stripped-down, pure-access approach and and its ability to work with the company's existing security infrastructure. "We don't need another e-mail box or storage; we just need raw bandwidth," he says.

A company has to have a certain level of remote access to make contracting for iPass services worthwhile, says iPass CEO Michael Mansouri. But it doesn't matter where the dial-up sessions occur, he says; even a company with strictly local remote access needs can see cost savings.

The key piece of technology that powers the iPass service is a settlement engine that balances the payments owed to the partner Internet providers with the usage charges billed to the clients, says Steve Harris, an analyst at International Data Corp.'s telecommunications practice in New York. Not only does the clearinghouse simplify things for corporate clients, but it also makes it easy for the Internet providers to serve any customer who come through iPass.

## Looking Ahead

Mansouri intends to leverage those settlement services into new lines of business for iPass, such as using the same business model to extend into voice over Internet protocol services. The settlement engine could be used to reconcile charges among providers who want to borrow capacity from one another for limited periods of time. For example, during a popular Internet event that might swamp existing connection capabilities, it would be better to rent bandwidth than build for a one-time peak.

Mansouri also says content providers are interested in adapting the company's settlement engine so that sites can sell content to nonsubscribers. Right now, billing considerations make such transactions unwieldy, but with a settlement engine in place such charges could be automatically added to a person's Internet service bill.

The danger in this growth strategy is that iPass could become unfocused and lose its momentum in the global roaming market. The company has few rivals — only GRIC Communications Inc. in Milpitas, Calif., is a direct competitor — and is ahead of anyone else, like a telecommunications or satellite-service company, that wants to enter the market.

But as long as iPass keeps its eye on its core business, it should be a winner. "They have a very strong business model, and they're clearly serving an important market," says IDC's Harris. "Not only is it a big one, but it's also a lucrative one."

*Johnson, a Computerworld contributor, is based in Seattle.*

MICHAEL MANSOURI: iPass' Internet provider clearinghouse could provide extra lines for access overflows during special events

## iPass Inc.

**Location:** 650 Castro St., Suite 500, Mountain View, Calif. 94041

**Telephone:** (650) 237-7300

**Web:** *www.ipass.com*

**Niche:** Provides worldwide access to corporate networks for the price of a local phone call

**Why it's worth watching:** iPass promises to let IT managers scrap the modem bank and still offer mobile users scalable, secure access.

**Company officer:** Michael Mansouri, chairman and CEO

**Company goal:** iPass is planning an initial public offering during the first half of this year.

**Milestones:**
- October 1996: Company is founded. Internet roaming product is released
- July 1997: Corporate access product is released
- June 1999: Mansouri replaces co-founder Chris Moore as CEO
- December 1999: Third-round financing

**Employees:** 80; growing 25% per year

**Burn money:** $21 million from Accel Partners, Asia Pacific Ventures, Crosspoint Ventures, Intel Corp. and Mentech in the recent round of funding.

**Services:** Clearinghouse services

**Customers:** Intershop Communication Inc., Ncube, PSINet Inc. and GTE Corp.

**Partners:** More than 650 Internet providers, Cisco Systems Inc., Nortel Networks and 3Com Corp. have signed with iPass.

**Red flags for IT:**
- Potential rivals include companies that already own a lot of wires - think AT&T Corp. If the big carriers decide to enter the market, iPass could be in trouble
- Someone who owns a lot of satellites - think Iridium LLC - might decide to enter the market.

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STATE OF THE MARKET

## Competition Can Kill

Blessed with a stable technical foundation - Internet standards are universally supported and no new technology is on the horizon - iPass has little fear that its service will become obsolete. It does need to watch out for competition, though. IPass has only one direct competitor using the same business model - signing up service providers to create a global network for Internet roaming. But it has to keep its eye on multinational companies in the telecommunications and satellite-service arenas that might decide to take a piece of the market.

### GRIC Communications

Milpitas, Calif.
*www.gric.com*

GRIC's corporate-roaming product has the same capabilities as that of iPass: support for multiple virtual private networks, a wide coverage area and combined billing statements. It doesn't appear to have the same scope of partners, however, says analyst Steve Harris at IDC. "Most of the carriers we talk to use iPass," he says. Because the name of the game is signing up Internet service providers and telecommunications firms, this may be a problem for GRIC in the long run.

### Telecommunications Companies:

If a company like AT&T Corp. wanted to enter the market, it could employ the same strategy as iPass and create partnerships to expand its network's reach. A telecommunications firm would have a profit advantage in the global roaming business, says Harris, because it owns its own wires and can squeeze more profit out of that lower overhead. But the flip side is that to expand its facilities, it would either have to build more infrastructure in areas around the world where it may face business and regulatory roadblocks, or take the iPass path and sign up partners where its network doesn't reach. That would require a significant effort. No company seems so inclined.

### Satellite Service Operators:

Satellite networks don't have the same wiring problems or partnership needs that a telecommunications company would face in trying to achieve coverage worldwide. But satellites are a huge capital expense; the most likely potential competitor would be a system already in orbit. Harris cites Washington-based Iridium LLC as a potential rival.

*- Amy Helen Johnson*

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# Mixed Reviews for the Mainframe Market

**What are the job and career opportunities for IT pros with primarily mainframe skills? Solid or dwindling, depending on who you ask. By Fawn Fitter**

THE CAREER outlook for mainframe professionals is decidedly mixed.

On the one hand, a high-tech recruiter in San Francisco reports that mainframe job openings are so scarce that eager applicants sent in three dozen résumés in two days for a single position.

On the other hand, the hiring manager at telecommunications giant Ameritech says she's having such a hard time finding mainframe professionals to run the company's giant billing systems that she's urging Chicago-area colleges to tailor their computer science courses to meet the company's needs.

It's true that companies still running their basic business programs on mainframes are finding that maintaining those legacy systems is increasingly difficult. The supply of information technology professionals with relevant skills continues to dwindle.

At the same time, though, no one is adopting mainframes for the first time, and more companies are moving aggressively off the mainframe toward client/server and Web-based databases.

*Computerworld* discussed employment prospects for people with mainframe skills with an IT hiring manager at a company reliant on mainframes, a director of a long-standing mainframe user group and an IT recruiter.

Here's the picture they painted of the future:

**CW: What's the outlook in the near future for candidates with mainframe skills?**

**THEWLIS:** A substantial number of companies with homegrown applications put in short-term Y2K fixes rather than converting to new applications, so their existing applications still need to be maintained. You're not going to see a lot of new companies running mainframes, although you will see companies [that are] already using mainframes finding new uses for them. Therefore, there are no huge growth prospects.

**JOHNSON:** Now that Y2K [has come and gone], mainframe people are out of work. I haven't had a mainframe [opening] in six months; they just aren't needed anymore. The people who do have positions aren't leaving because they know there's nothing else out there for them.

**SCHNEIDER:** I don't see hiring slowing significantly with the [new] year. We've hired a significant number of people with mainframe skills [in the past] year, and we plan to continue because we have a massive billing system that runs off mainframes.

**CW: How is the shifting market affecting pay rates?**

**THEWLIS:** Now that the need for these skills is less urgent, I think companies will hire a few people on staff and let the consultants go. From that perspective, the wages may drop overall, [but] the people on staff won't see drops.

**JOHNSON:** [For contractors and consultants], I'm seeing hourly rates dropping back from $75 to $100 per hour to $30 to $40 per hour now that Y2K is no longer an issue.

**SCHNEIDER:** Our salary benchmarking surveys show that client/server people are only seeing salaries approximately 2% to 5% higher than the mainframe people. I don't anticipate that gap will grow much wider over the next three to five years.

**CW: What career paths can IT staffers with these skills expect in the next couple of years?**

**THEWLIS:** The new demand for these people will be in tying legacy applications to e-commerce and Web skills. People will find they're expected to be able to learn new skills and extend the application of the skills they already have.

**JOHNSON:** The skills translate easily into systems administration, program analysis or project management. Everybody is looking for systems administrators who make sure everything works the way it's supposed to.

**SCHNEIDER:** Architecture, project management and quality assurance are becoming more in demand. They can also climb up in the development ranks or get into database analysis.

**CW: What other skills will be essential to have in tandem with mainframe skills to get ahead?**

**THEWLIS:** More than 75% of the world's applications code is in Cobol, so it's not really going to go away anytime soon. But if somebody knows nothing but Cobol, it would be wise for them to learn another language.

**JOHNSON:** Enterprise JavaBeans, Oracle8, SAP and other new skills. Get into them even if you have to take a cut in salary or responsibility to do it.

**SCHNEIDER:** I'd tell people to acquire a multiple-platform background to build the strong conceptual and theoretical knowledge they need to survive and thrive long term. If they have a strong business background, they can become the hybrid that speaks to the IT community while interfacing with the business people as well.

**CW: Where is this market headed, long term?**

**THEWLIS:** I expect that five to 10 years from now, companies may find they can't get mainframe systems programmers and people who understand how to bridge existing mainframe apps with new technologies, because all those people will have retired.

**JOHNSON:** It's not going anywhere. If you've just gotten a degree in this, go back to school and demand a rebate. Do anything rather than continue working with this antiquated technology.

**SCHNEIDER:** I've been hearing dire predictions for a while, but there will still have to be systems around to handle the giant applications. I don't see our billing department, for example, breaking down into smaller departments and running on client/server systems. We just don't know yet how the mainframe will operate or how it will interface.

*Fitter is a freelance writer in San Francisco.*

THE PANELISTS

**David Thewlis,** deputy director of industry relations for standards at Share, an IBM large-systems user group

**Larry Johnson,** technical recruiter at Baldwin Forrester & Co., a San Francisco-based high-tech recruiting firm

**Renee M. Schneider,** director of staffing for corporate information systems at Chicago-based Ameritech Corp.

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Position: Systems Engineer. Qualifications: Must have at least a BS degree in Electronic or Electrical Engineering or Computer Science or related. Must have documented proof of 1 year experience as a Systems Engineer. Must have proof of legal authority to work in the U.S. Duties: Review system requirements & specifications, assist in creating a verification strategy and a verification plan, assist in the execution of the plan against the system and submit report to management. In the Operations, Administration, Maintenance & Provisioning (OAM&P) area, focus is on the Base Station Sub-System (BSS) management: Base Transceiver Station (BTS), Base Station Controller (BSC) and Operations Maintenance Center - Radio (OMC - R). Verify telecommunications products which are based on Global System for Mobile Communications (GSM) systems including 1) architecture: Mobile Station (MS), BTS, BSC, TransCoder Unit (TCU), A - Abis - Ater interfaces; 2) protocols: BTS Management (BTSM), Base Station Subsystem Application Part (BSSAP), Mobility Management (MM), Connection Management (CM); 3) Operations Maintenance Center - Radio (OMC-R); and 4) General Packet Data Service (GPRS), using Internet protocols such as TCP/IP and Voice over IP. Area of Employment: Colorado Springs, Colorado. Salary: $80,000 per year, 40 hour work week. Contact: Send resume to Jim Shimada, Colorado Department of Labor and Employment, Tower 2, Suite 400, 1515 Arapahoe Street, Denver, CO 80202-2117 refer to Order Number CO4645321.

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Software Engineer required by a Spec Software Dev & Consultancy Co. Duties: Installation configuration and administration of midrange HP9000 Unix systems. Installation, configuration of HP-UX 10.20, HP-UX 10.10 HP-UX9.04 operating systems. Configuration 1an X.25, NFS TCP/IP Installation and configuring Mirror/UX, glance plus, Switch over/UX, Using TAR CPIO FBACKUP backup tools. Loading patches. Installing new performance monitoring on systems with SAR, TOP tools. Loading patches. Installing new software and upgrading software and systems. Interface between hardware and software. Writing unix shell programmes. Job to be performed by traveling to other unanticipated client sites throughout the US. Requirements: Masters degree in Math or Engg. or Sci or Comp. Sci. and one year exp. in job offered or will accept a Bachelor's Degree with 5 years of progressive experience in lieu of a Masters Degree. Salary: $60,000/Year. Hours: 8.00 AM to 5.00 PM. Send two copies of resumes to: Case: C101029 Gerald Gulseth DWE ALC PO Box 7972, Madison, WI 53707-7972.

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**Delphi Programmer/Analyst** - assists in determining user requirements, writes business applications in Delphi version 4.0 with standard query language (SQL) server database, participates in code walk through, testing and implementation activities to deliver business applications to user base, supports existing applications, develops new subroutines or expands program. Must have documentable ability to program in Delphi version 4.0 for diverse business and technical applications. B.A. or B.S. degree in computer science or math and 2 years experience. Hours: Mon - Fri. 7:30 A.M. - 5:30 P.M. Lowell, Ark. Salary $42-54,000 year per experience. Apply at Ark. Employ. Sec. Dept., 1626 S. 8 St. Rogers, AR or send 2 resumes to David Hayes, PO Box 2981, Little Rock, AR 72203, job order #948300.

Data Communications Analyst needed by Engg & Catalyst Mfg Co. in Houston, TX. Must have Bachelors in Comp Sci & 2 yrs exp. investigating, assessing and recommending computer & n/working communications h/ware, peripherals & applics and utilities.

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CTI Administrator wanted by Independent Financial Services Co in Parsippany NJ. Must have Masters in Comp Sci, MIS or related field & 3 yrs exp creating CONVERSANT IVR applications 1 yr exp developing and supporting Answersoft and DAVOX CTI applications and 1 yr exp writing COM object applications. Respond to Enca Tekal HR Dept., CIT Group/Newcourt Financial USA, Inc, 650 CIT Drive Livingston New Jersey 07039

SAP Consultant wanted by New Jersey based S/ware Dvlpt & Consulting Services Firm for job locs throughout US. Must have Bach in Comp Sci or Engg & 4 yrs s/ware exp. Respond to: HR Dept. Indus Consultancy Services, Inc. 140 E Ridgewood Ave. Paramus, NJ 07652

DB Design Analyst needed to develop and maintain Internet based telephonic, E-Commerce based transaction processing & data warehousing systems. Apply to Adi Data Int'l, 100 Franklin Sq. Dr #205, Somerset, NJ 08873.

Senior Software Development Engineer wanted by Computer Modeling & Optimization S/ware & Services Co in Cambridge, MA Must have Masters in Comp Sci, Engg or equiv & 2 yrs exp in s/ware engg Respond to: HR Dept. Aspen Technology, Inc., 10 Canal Park, Cambridge, MA 02141

Software Engineer - BS in Comp. Sci. or Eng. with at least 2 years of experience in software design and coding required. Must be proficient in object oriented software development. Duties include assisting more senior engineers in defining clients' system requirements, designing, coding, testing, installing and integrating applications for Intelligent Transportation Systems software in a UNIX and Windows environment. $55K annual salary - standard benefits. Fax resume to (404)624-7842 c/o Dharmajyoti Bhaumik @National Engineering Technology Corporation

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Software Engineer sought by Computer Services Co in Colts Neck, NJ Must have Masters in Comp Sci, Comp Engg or Elec Engg. Respond to: HR Dept, Communications Excellence, Inc., 11 Deputy Minister Dr, Colts Neck, NJ 07722

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Charlotte, NC Design & implement new risk programs, incl coordinating system operations & coding design. Reqs MBA or Master's in Finance (graduate or undergraduate coursework must have incl investments (i.e. fixed income, financial analysis, portfolio management), risk management, statistics, C++ and Java) & two years of exp working w/Visual Basic, SQL and MS Windows NT 40 hrs./wk. Send resume to Donna Maxon, 1525 West W.T Harris Blvd. NC0775 Charlotte, NC 28262-0775.

Software Engineers needed for NJ IT Co. to analyze, design, develop software applications using Lotus Notes, Domino, HTML, JavaScript, Perl/CGI. Apply to Global Consultants, 601 Jefferson Rd, Parsippany, NJ 07054.

Programmer/Analyst wanted by Computer Consulting Co in Brooklyn, NY Must have 2 yrs exp preparing program specifications, analyzing, desing, dvlpg, coding, testing & implementing programs for applics systems using C++. Respond to: HR Dept, Datasay, Inc., 1657 E 19th St, Brooklyn, NY 11229

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**Two Systems Engineers (Advanced) positions.** Provide programming and technical leadership to support customer requirements. Analyze design, develop and test computer programs and subsystems utilizing multiple programming languages. Lead other system engineers in analysis, design, development, testing, implementation and documentation tasks. Participate in implementations, system upgrades, system enhancement and conversions. Interface with customers to define system requirements and priorities. Analyze and resolve production problems. Support business studies costing, feasibility studies, and proposal development. Requires a Masters or "equivalent in any field plus two (2) years experience in the job offered or two (2) years experience in systems analysis, design, development and testing in a COBOL or C environment ("Employer deems Bachelors degree plus five (5) years progressive experience in the related occupation as equivalent to a Masters degree and two (2) years progressive experience in the related occupation.) 40 hours per week, 8AM to 5PM Monday through Friday. Salary for one position is $5,900 per month. Salary for the other position is $5,750 per month. Applicants must refer to Ref #1213 or #1214 respectively and submit resumes to Jane Hosley DES 275 E. Main St. 2-W Frankfort KY 40621. Only persons with authorization to work permanently in the U.S need apply. EQUAL OPPOR

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Computer Services Co. in Edison, NJ seeks to fill the following job opening. Software Engineer - Must have Masters in Economics or Statistics & 1 yr statistics & regression analysis exp. Respond to: HR Dept. Horizon Companies, Inc., 5 Lincoln Highway, Edison, NJ 08820.

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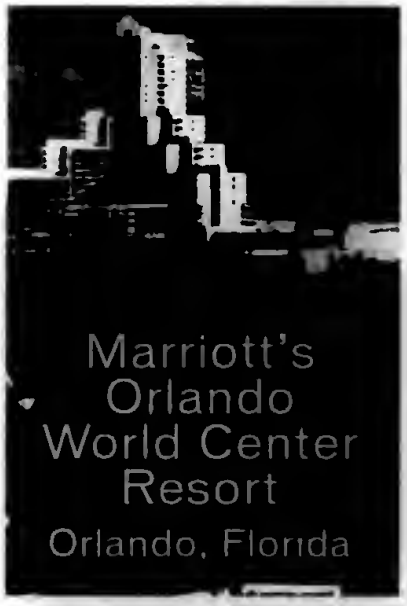


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to design, develop and test computer programs for business applications, analyze software requirements to determine feasibility of design, direct software system testing procedures, utilizing expertise in PowerBuilder, Sybase, PFC and Informix. Requirements: Master's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer. Knowledge of PowerBuilder, Sybase, PFC and Informix. Salary $62,400/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Ms. Barbara Cole, Greene County Team PA Career Link, 4 West High Street, Waynesburg, PA 15370. Job No. 7058722.

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**Systems Analysts**

to analyze user requirements, procedures and problems to improve existing computer systems and software. Confer with user personnel to analyze current operational procedures, identify problems, and learn specific input and output requirements. Write detailed descriptions of user needs, program functions, and steps required to develop or modify computer programs. Review computer system capabilities to determine if requested program or program change is possible within existing system. Evaluate effectiveness of existing information processing systems. Study development of new information systems to meet current and projected needs. Plan and prepare documentation of the program development. Upgrade systems and correct errors to maintain system after implementation. Bachelor or equivalent in Computer Sc. plus two yr. exp. in job offered or two yr. exp. as Programmer req. Salary $54,000/yr. Job site various unanticipated sites throughout the U.S. Employer location: Pittsburg. Send resume to Job #7058650, Joseph Stalico, Pittsburgh / Allegheny Careerlink, 425 Sixth Ave., Suite 2200, Pittsburgh, PA 15219

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Multiple positions exist across the United States. Programmer Analyst positions require Bachelors degree or equivalent and Software Engineer/ Software Consultant positions require a Masters degree or equivalent.

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# Internet Keeps EMC Ahead of the Pack

## *Storage needs of dot-coms fuel company's growth*

BY KATHLEEN OHLSON

ENTERPRISE STORAGE provider EMC Corp. is a darling of Wall Street and will probably remain so as long as the online databases of high-growth Internet companies continue to expand.

The Hopkinton, Mass.-based firm, which will report earnings this Wednesday, should at least hit 31 cents per share for the fourth quarter of 1999, ended Dec. 31, according to analysts at Boston-based First Call Corp. But many analysts predict EMC will blow by that prediction and keep on going.

Analysts expect much of that growth to come from dot-coms and their high storage demands, according to analyst Shebly Seyrafi at St. Louis-based A. G. Edwards & Sons Inc.

Internet companies don't have the luxury to wait for large amounts of storage, said Steve Duplessie, an analyst at Enterprise Storage Group Inc. in Milton, Mass. When they need it, they need it immediately, and among major storage veodors, only EMC can accommodate their astronomical growth, he said.

For example, it took 10 years for Citibank's total online storage to reach 75 terabytes (TB), compared with the 30 days it took Mail.com to hit 30TB, Duplessie said.

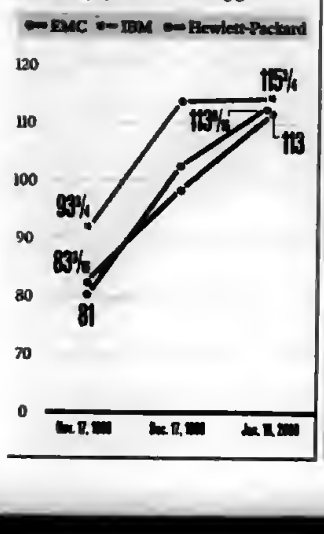
Redwood City, Calif.-based Excite@Home is an EMC customer, currently requiring 50TB of storage. John Prall, CIO at the media company, praises EMC's ability to deliver large amounts of storage quickly, as well as its expertise with complex installations and applications.

Seyrafi rates EMC [NYSE:EMC] as a Strong Buy and says it's a "top pick" for investors based on its accelerating revenue, Internet presence, high gross margin, product execution and management team.

Competitors of EMC's Symmetrix Enterprise Storage System include Shark from IBM [NYSE:IBM] and the 7700E from Hewlett-Packard Co. [NYSE:HP] and Hitachi Data Systems. But these products haven't made a dent in EMC's growth, say analysts. ◗

## EMC on a Winning Streak

*Demand from Net companies is driving the storage provider's strong growth.*

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# How to Contact Computerworld

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**Main phone number** (508) 879-0700
*All editors unless otherwise noted below*
**Main fax number** (508) 875-8931
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### E-MAIL

Our Web address is **www.computerworld.com.** All staff members can be reached via e-mail on the Internet using the form: **firstname_lastname@computerworld.com.**

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Letters to the editor are welcome and should be sent to: **letters@computerworld.com.** *Include your address and telephone number.*

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### REPRINTS/PERMISSIONS

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### CONTACTING CW EDITORS

We invite readers to call or write with their comments and ideas. It is best to submit ideas to one of the department editors and the appropriate beat reporter

**Editor in Chief** Maryfran Johnson (508) 820-8179
**Editorial Director Print/Online** Patricia Keefe (508) 820-8183

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**News Editors** Michael Goldberg (508) 620 7789; Anne McCrory (508) 820-8205; Sharon Machlis (508) 820-8231
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### COMPUTERWORLD ONLINE

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# Win2000

that Windows 2000 will ship to international customers with 128-bit encryption instead of 64-bit encryption, reflecting the U.S. government's recent decision to lift encryption export controls.

Brian Valentine, senior vice president of the Windows division at Microsoft, asserted that the new operating system is the most secure the company has ever shipped. "Windows 2000 is the first wave of reengineering security inside the company, raising the bar for security," he said.

Windows 2000 was designed to be resistant to attacks through a new development process in which programmers put each module through specific security criteria, Valentine said. A dedicated team of outside consultants then spent 18 months evaluating the software for potential flaws. Outside evaluators and key customers did so as well.

- Has relaunched its 24-hour Security Response Center at *www.micro-soft.com/security* to better handle concerns from customers and work with fellow vendors
- Will package Windows 2000 with clearer guidelines for IT managers to implement security configurations
- Has made Windows 2000 compatible with the IPSEC network security protocol

If Microsoft didn't make security an essential part of product design, customer confidence could be shaken and e-commerce impeded, Valentine said.

Two users involved in the testing said they were pleased by the process and the result.

One of them was Todd Kreuger, founder of San Diego-based 2earn, which develops telephony and Web-based applications. "It's better than NT 4.0, and data access is awesome using multithreaded applications," he said.

But critics said that because of its size, the operating system, scheduled to be released Feb. 17, will introduce security holes that can't be anticipated. Past versions of the operating system were plagued by software bugs that made systems vulnerable to security exploits.

"I'm not extending my trust barrier any further, assuming that this code comes from the old code," said Jeff Schiller, who oversees the security groups of the Internet Engineering Task Force.

Schiller and other members of an RSA 2000 panel on Internet security emphasized that despite Microsoft's efforts, they don't consider Windows 2000 secure.

"Tight coupling and integration of the features make it less secure," said Steven Bellovin, a security expert at AT&T Bell Laboratories in Florham Park, N.J. He noted that features such as the "paper clip" help function could be used to monitor key strokes.

Bruce Schneier, chief technology officer at Counterpane Internet Security Inc. in San Jose, pointed out that Windows 2000 has 40 million to 60 million lines of code, so Microsoft would need to employ many more debuggers to prevent potential software errors. "Complexity is the enemy of security," he said. "As [Windows operating systems] get more complex, we are seeing more bugs." ◗

# NT Nets Need Cleanup Before Win 2K

CIOs who believe that their sprawling Windows NT networks can be brought under control magically with Active Directory will be disappointed, users and analysts said.

NT networks are organized into domains connected by trust relationships, an architecture that has been criticized as unscalable and difficult to manage. Active Directory still supports these domains but includes them in a hierarchical directory tree.

"From what we've seen of Windows 2000, you have to have everything in order" before migrating, said Brad Williamson, senior network analyst at UOP, a petrochemical technology company in Des Plaines, Ill.

The company acquired domain-management tools from FastLane Technologies Inc. in Halifax, Nova Scotia, to pare down its number of domains from 29 to 15. The reduction was mainly to ease short-term management pains, but also to prepare for a future Windows 2000 migration.

Branch offices had created their own NT domains as a sign of their independence, he said. "I wouldn't call it easy," Williamson said about the company's domain-consolidation effort, but with only NT's built-in tools, it would have been "damn near impossible."

Laura DiDio, an analyst at Giga Information Group Inc. in Cambridge, Mass., said this situation is common. "Ask any large enterprise how many domains they have, and you'll hear a long pause," she said. "And if they can't answer that question, they are already in deep trouble."

Microsoft Corp. has included licensed technology from Houston-based Mission Critical Software Inc. in Windows 2000. The software permits users and resources to be moved into Active Directory during migration. But, said DiDio, "Before you can migrate, you have to consolidate and collapse these [domains]."

"You have to take pause and evaluate what you are taking into Active Directory," said Tom Wagner, senior information technology analyst at Cargill Inc. in Minneapolis. Wagner has been using tools from Entevo Corp. to manage an NT network. He's now evaluating Arlington, Va.-based Entevo's Active Directory migration tool.

"We are taking Windows 2000 as an opportunity to get one consolidated [directory] infrastructure at Cargill," said Wagner.

*– Dominique Deckmyn*

*Continued from page 1*

# Microsoft

tear the company apart.

"This is a time when the company is going to battle," said Michael Gartenberg, an analyst at Gartner Group Inc. in Stamford, Conn.

"Microsoft has a new vision, [it has] the ongoing fight with the [Justice Department] and competition is stronger than ever in every segment," he said.

Steve Ballmer acknowledged as much when he took over as Microsoft's CEO two weeks ago. "It's a challenging time. But the time Microsoft is faced with challenges is the time we do our best work," he said.

## Application Hosting

Perhaps the most pressing challenge is the movement in the industry to offer software via online subscriptions rather than shrink-wrapped disks. This application hosting model has Microsoft in a hard spot.

The most valuable company in the world got that way by selling prepackaged software. The concept of pay-as-you-use subscriptions is "a very, very different model" from what Microsoft is used to, said Dwight Davis, an analyst at Summit Strategies Inc. in Seattle.

Microsoft has partnered with several application hosting companies, but questions remain, Davis said.

For example, technologically, Microsoft must decide how to split its products for users who don't want to subscribe to large bundles. A user might want to run the Word word-processing program but not the spreadsheet, database and other software that comes with the Office suite. Likewise, pricing is an unknown, Davis said. Start-up companies and established players such as Sun Microsystems Inc. offer subscription software at low prices — and sometimes for free, he said.

"Microsoft, which has had great market power to set prices and undercut competitors' prices, is suddenly coming up against a new breed of competitors willing to cut prices to the bone," he said. "If you're Microsoft, it's tough to compete with that when you have revenue goals and a stock price to grow."

Windows 2000 will be a marketing challenge. Microsoft hopes to erase its reputation for server operating systems that can't support hundreds of users in business-critical applications.

## Help Wanted

In addition, Microsoft must provide more help for customers looking to rewrite key applications for Windows 2000, users and analysts said. The vendor claims that more than 7,000 off-the-shelf programs will be available for the new operating system, but that doesn't address custom software that large information technology shops often run. Except in special cases with its very biggest customers, Microsoft refers users seeking such help to integrators and consulting firms such as Computer Sciences Corp. and Unisys Corp.

Meanwhile, Microsoft has from now until a self-imposed April deadline to devise a detailed schedule for a set of new products called Next Generation Windows Services. Chairman Bill Gates said he will be leading this charge to infuse all Microsoft products with Internet capabilities.

Larry Andrews, manager of the network operations center at a large entertainment company in California, said he's concerned that Next Generation Windows Services will too tightly couple operating systems with applications. Microsoft continuously blurs the line between the two, Andrews said.

"That's a good part of where their reliability issues come from," he said. "Windows is the only software I know of where you can get a corrupted word-processing document that will crash your system."

Microsoft declined to make executives available to be interviewed about application hosting or Windows 2000 for this article. ◗

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*Continued from page 1*

# Win2000

that Windows 2000 will ship to international customers with 128-bit encryption instead of 64-bit encryption, reflecting the U.S. government's recent decision to lift encryption export controls.

Brian Valentine, senior vice president of the Windows division at Microsoft, asserted that the new operating system is the most secure the company has ever shipped. "Windows 2000 is the first wave of reengineering security inside the company, raising the bar for security," he said.

Windows 2000 was designed to be resistant to attacks through a new development process in which programmers put each module through specific security criteria, Valentine said. A dedicated team of outside consultants then spent 18 months evaluating the software for potential flaws. Outside evaluators and key customers did so as well.

If Microsoft didn't make security an essential part of product design, customer confidence could be shaken and e-commerce impeded, Valentine said.

Two users involved in the testing said they were pleased by the process and the result.

One of them was Todd Kreuger, founder of San Diego-based Zearn, which develops telephony and Web-based applications. "It's better than NT 4.0, and data access is awesome using multithreaded applications," he said.

But critics said that because of its size, the operating system, scheduled to be released Feb. 17, will introduce security holes that can't be anticipated. Past versions of the operating system were plagued by software bugs that made systems vulnerable to security exploits.

"I'm not extending my trust barrier any further, assuming that this code comes from the old code," said Jeff Schiller, who oversees the security groups of the Internet Engineering Task Force.

Schiller and other members of an RSA 2000 panel on Internet security emphasized that despite Microsoft's efforts, they don't consider Windows 2000 secure.

"Tight coupling and integration of the features make it less secure," said Steven Bellovin, a security expert at AT&T Bell Laboratories in Florham Park, N.J. He noted that features such as the "paper clip" help function could be used to monitor key strokes.

Bruce Schneier, chief technology officer at Counterpane Internet Security Inc. in San Jose, pointed out that Windows 2000 has 40 million to 60 million lines of code, so Microsoft would need to employ many more debuggers to prevent potential software errors. "Complexity is the enemy of security," he said. "As [Windows operating systems] get more complex, we are seeing more bugs." ▶

**Windows 2000 Security**

Some weak links remain, but new features look promising

- Has relaunched its 24-hour Security Response Center at *www.microsoft.com/security* to better handle concerns from customers and work with fellow vendors
- Will package Windows 2000 with clearer guidelines for IT managers to implement security configurations
- Has made Windows 2000 compatible with the IPSEC network security protocol

# NT Nets Need Cleanup Before Win 2K

CIOs who believe that their sprawling Windows NT networks can be brought under control magically with Active Directory will be disappointed, users and analysts said.

NT networks are organized into domains connected by trust relationships, an architecture that has been criticized as unscalable and difficult to manage. Active Directory still supports these domains but includes them in a hierarchical directory tree.

"From what we've seen of Windows 2000, you have to have everything in order" before migrating, said Brad Williamson, senior network analyst at UDP, a petrochemical technology company in Des Plaines, Ill.

The company acquired domain-management tools from FastLane Technologies Inc. in Halifax, Nova Scotia, to pare down its number of domains from 29 to 15. The reduction was mainly to ease short-term management pains, but also to prepare for a future Windows 2000 migration.

Branch offices had created their own NT domains as a sign of their independence, he said. "I wouldn't call it easy," Williamson said about the company's domain-consolidation effort, but with only NT's built-in tools, it would have been "damn near impossible."

Laura DiDio, an analyst at Giga Information Group Inc. in Cambridge, Mass., said this situation is common. "Ask any large enterprise how many domains they have, and you'll hear a long pause," she said. "And if they can't answer that question, they are already in deep trouble."

Microsoft Corp. has included licensed technology from Houston-based Mission Critical Software Inc. in Windows 2000. The software permits users and resources to be moved into Active Directory during migration. But, said DiDio, "Before you can migrate, you have to consolidate and collapse these [domains]."

"You have to take pause and evaluate what you are taking into Active Directory," said Tom Wagner, senior information technology analyst at Cargill Inc. in Minneapolis. Wagner has been using tools from Entevo Corp. to manage an NT network. He's now evaluating Arlington, Va.-based Entevo's Active Directory migration tool.

"We are taking Windows 2000 as an opportunity to get one consolidated [directory] infrastructure at Cargill," said Wagner.

– *Dominique Deckmyn*

*Continued from page 1*

# Microsoft

tear the company apart.

"This is a time when the company is going to battle," said Michael Gartenberg, an analyst at Gartner Group Inc. in Stamford, Conn.

"Microsoft has a new vision, [it has] the ongoing fight with the [Justice Department] and competition is stronger than ever in every segment," he said.

Steve Ballmer acknowledged as much when he took over as Microsoft's CEO two weeks ago. "It's a challenging time. But the time Microsoft is faced with challenges is the time we do our best work," he said.

## Application Hosting

Perhaps the most pressing challenge is the movement in the industry to offer software via online subscriptions rather than shrink-wrapped disks. This application hosting model has Microsoft in a hard spot.

The most valuable company in the world got that way by selling prepackaged software. The concept of pay-as-you-use subscriptions is "a very, very different model" from what Microsoft is used to, said Dwight Davis, an analyst at Summit Strategies Inc. in Seattle.

Microsoft has partnered with several application hosting companies, but questions remain, Davis said.

For example, technologically, Microsoft must decide how to split its products for users who don't want to subscribe to large bundles. A user might want to run the Word word-processing program but not the spreadsheet, database and other software that comes with the Office suite. Likewise, pricing is an unknown, Davis said. Start-up companies and established players such as Sun Microsystems Inc. offer subscription software at low prices — and sometimes for free, he said.

"Microsoft, which has had great market power to set prices and undercut competitors' prices, is suddenly coming up against a new breed of competitors willing to cut prices to the bone," he said. "If you're Microsoft, it's tough to compete with that when you have revenue goals and a stock price to grow."

Windows 2000 will be a marketing challenge. Microsoft hopes to erase its reputation for server operating systems that can't support hundreds of users in business-critical applications.

## Help Wanted

In addition, Microsoft must provide more help for customers looking to rewrite key applications for Windows 2000, users and analysts said. The vendor claims that more than 7,000 off-the-shelf programs will be available for the new operating system, but that doesn't address custom software that large information technology shops often run. Except in special cases with its very biggest customers, Microsoft refers users seeking such help to integrators and consulting firms such as Computer Sciences Corp. and Unisys Corp.

Meanwhile, Microsoft has from now until a self-imposed April deadline to devise a detailed schedule for a set of new products called Next Generation Windows Services. Chairman Bill Gates said he will be leading this charge to infuse all Microsoft products with Internet capabilities.

Larry Andrews, manager of the network operations center at a large entertainment company in California, said he's concerned that Next Generation Windows Services will too tightly couple operating systems with applications. Microsoft continuously blurs the line between the two, Andrews said.

"That's a good part of where their reliability issues come from," he said. "Windows is the only software I know of where you can get a corrupted word-processing document that will crash your system."

Microsoft declined to make executives available to be interviewed about application hosting or Windows 2000 for this article. ▶

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# Be prepared

VIRGIN ATLANTIC AIRWAYS did the right thing — and now it's getting grief for it. The problem? Virgin Atlantic created a Web page (*www.virgin-atlantic.com/emergency*) to alert customers and the press in case of a crash. It's a fill-in-the-blanks page that reads, "A Virgin Atlantic aircraft has been involved in an accident: The plane was flying from X(PLACE)X to X(PLACE)X on X(DATE)X. It took off from X(PLACE)X at X(TIME)X local time. The flight number is VS X(NUMBER)X. We are already working closely with emergency authorities involved and are channeling all our efforts into collecting information about the accident."

Hey, airplanes fall out of the sky. It doesn't happen often, and nobody's happy when it does. But being ready with a Web page means there's one less problem to solve in the chaos following a crash. Thinking ahead — planning for contingencies you hope will never happen — is the sensible, responsible thing to do.

But it's also politically incorrect. Airlines aren't supposed to admit a crash could happen. So Virgin Atlantic got grief in the British press when reporters discovered the page, and a spokeswoman had to repeat the obvious: A crash is "very unlikely," but creating the page was "definitely normal" procedure for being "completely prepared."

But next time, you can bet Virgin Atlantic will do a better job of hiding its contingency plans.

Corporate IT shops are catching grief these days for being prepared, too. Now that Y2K zero hour has passed without the collapse of civilization, Monday-morning quarterbacks are decrying the hundreds of billions of dollars it cost. One big whining point: All the money spent on Y2K contingency planning.

See, contingency planning isn't politically correct. All that time and money spent on what-if scenarios and warm bodies on call on New Year's Eve were wasted, according to this crowd. It would have been a lot cheaper, they argue, to treat Y2K system failures like fires or train wrecks: Just buy some insurance.

Let's walk through this slowly, because it's baloney, but it's very *appealing* baloney.

Insurance works because all the policyholders aren't likely to have the same catastrophe at once. If all of Geico's car insurance customers totaled their cars the same day, Geico would go broke. But they don't because car accidents are spread out over time.

There was no such time-spreading with Y2K. All the big Y2K smashups would have happened in a single day. And they would have cascaded, like an endless pileup on a worldwide freeway. If we'd relied on insurance instead of solving the problem, even companies that fixed their problems could be down the tubes right now.

*Corporate IT shops are catching grief these days for being prepared.*

But the vast majority of IT shops made a choice when they began their Y2K work. We decided not to put our trust in insurance or lawsuits or vendor promises, or even our own ability to fix the problem.

Instead, we made contingency plans. We calculated catastrophe scenarios. We prepared for the worst.

Why? The business case was simple: If our systems went south and one of our competitors survived, it would walk away with our business and customers while we were haggling with the insurance company and screaming at vendors. If we needed the insurance, it would be too little, too late to save the business.

Did it cost more? Only in theory. What would a demolished business have cost?

Nope, we did the right thing. We planned ahead. So now, naturally, we're getting grief for it.

Maybe next time we should hide *our* contingency plans, too. ◗

*Hayes, Computerworld's staff columnist, has covered IT for more than 20 years. His e-mail address is frank_hayes@computerworld.com.*

## SHARK TANK

**THIS MIDWEST OUTFIT** is ready to go online. Wants to stick with Linux and existing hardware if possible. Sets up an audit. Consultant pitches an all-new, high-dollar setup. IT says no thanks. Get this: The jilted sales rep writes a report claiming IT is "recklessly endangering our corporate data and gives it to our *corporate attorney*," a pilot fish fumes. Happy ending: The business owner is furious at the end run. Pistol-whips the sales rep.

**HAS AN ASSOCIATE CIO** at a certain federal agency *really* recommended that the agency buff up security by simply denying FTP and HTTP at the firewall? Jeez, the specter of rioting bureaucrats . . . ugly. Sorry, the Shark can't tell you which agency this prime cut is about.

**FUNNY HOW SALES REPS** forget things. This one Symantec rep sold a big IT shop Norton's AntiVirus. Major benefit: remote installation and discovery. But then a pilot fish finds a note buried in a readme file: He couldn't use the remote features "unless I went around to every client and server on the network, installed IPX and rebooted them. Sort of ruins the benefit of not having to send a tech out." Sharky called Symantec. The vendor 'fessed up. Said it's fixing the snag this week.

**A PRESS RELEASE** from a PC maker included the usual rave review from an analyst. But where the analyst's name should go, it read: "Joe Analyst, Quotes Three for a Buck." A reporter-type pilot fish says the vendor's PR staff wrote up the quote, then shopped for an analyst who'd hang his name underneath it. Didn't find one in time. And they wonder why users are cynical.

**ACTRESS HEDY LAMARR,** a flat-out bombshell (often ooh-la-la'd by Sharky's dad) from the '30s and '40s, died last week. True fact: Lamarr shared the patent that led to "spread spectrum," an antijamming scheme now used in wireless networks. Keep the Tank jamming along: **sharky@computerworld.com.** For a daily jelly roll: *computerworld.com/sharky.* Your item runs, you get a T-shirt.

## The 5th Wave

"Room service? Please send someone up to refresh the mini bar, make up the room and defrag the harddrive."

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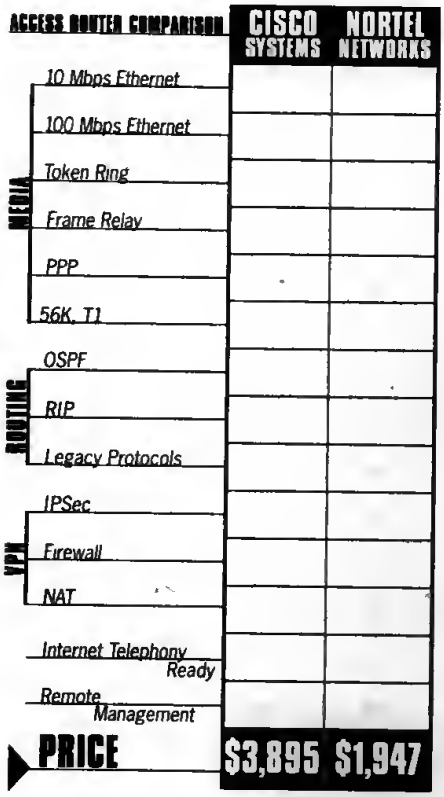


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